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**Challenges in the Conservation of the Negeri Sembilan Traditional Malay  
House (NSTMH) and Establishment of a Conservation Principles Framework**

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Doctor of Philosophy

The University of Edinburgh

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## **DECLARATION**

I hereby declare that I am the sole author of this thesis; that the following thesis is entirely my own work; and that no part of this thesis has been submitted for another degree or qualification.

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Year : 2016





## ABSTRACT

The survival of vernacular architecture in the world, and particularly in Negeri Sembilan, Malaysia, is under threat due to rapid modernization, urbanization, socioeconomic transformation, loss of its characteristics resulting from changes and development, and misinterpretation of its typology as well as serious issues of abandonment. Most Negeri Sembilan traditional Malay houses (NSTMH), in some cases over one hundred years old, are unprotected and are becoming derelict. The vernacular value of these houses and their preservation for future generations are therefore threatened. To date, little research has been undertaken into the challenges posed in the conservation of NSTMH from the perspectives of house owners and professionals, and how the changing patterns of their form, fabric, and function have shaped the challenges of preserving them. To explore this from a more holistic approach, existing local heritage legislation that protects traditional Malay houses in particular or timber vernacular architecture in general, and international charters were reviewed, as also successful cases of preservation of similar heritage. This research employs a multi-method qualitative approach by examining as a purposive sample selected 19th-century long-roof-type NSTMHs. The research methods consisted of semi-structured interviews with house owners and conservation experts, on-site survey of the houses' changing patterns of form, fabric, and function, as well as reviews of the conservation heritage legislation context (national/ local) and international charters. Interview data were analysed using thematic analysis, while the accepted concept model of cultural heritage was used for analysis of the patterns of changes in the cases examined. Documents were reviewed using template analysis.

Findings from the research outline the main challenges that include a lack of appreciation and understanding of heritage among house owners, lack of traditional building skills, lack of government support as well as insufficient documentation. Nonetheless, there is no legislation in place at either a national or local level to protect the traditional Malay house. All of the findings were triangulated prior to the development of the initial framework and further expert validation was obtained to establish the final framework.

This research makes a significant contribution in expanding the existing body of knowledge, through exploration of how the house owners understand, value, and appreciate heritage within their environment, in addition to including conservation experts' perspectives in this regard. Moreover, the main contribution of this study is the provision of a Conservation Principles Framework for the NSTMH that may be used by house owners, conservation experts, officials, the Village Security & Development Committee, academics, and students as a form of guidance to the implementation of conservation works. It is also hoped that it may act as a starting point for the Negeri Sembilan state government to develop guidance aimed to safeguard this valuable Malaysian heritage.

## **PREFACE**

My interest in conservation work started nearly 20 years ago when I was an undergraduate student. As part of the graduation requirement, I was involved in producing measured drawings report for one of the Negeri Sembilan Traditional Malay Houses in my hometown. I am particularly interested in vernacular architecture and after seeing a lot of properties being abandoned, I was curious to know the reason behind this situation. Another thing that bothers me is the fact that some of those traditional houses had changed so much in its form, and some even had lost part of the original form. Therefore, having the opportunity to further my study, I have chosen a research work that will help me understand the restrictions for a proper care and hopefully will be able to provide guidance towards its conservation and maintenance.

Mohd Sabere Sulaiman

Edinburgh



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## **LIST OF ABBREVIATIONS**

ASEAN	:	The Association of Southeast Asian Nations
CMP	:	Conservation Management Plan
CPF	:	Conservation Principles Framework
FRIM	:	Forest Research Institute Malaysia
GCHB	:	Guideline of Conservation of Heritage Building
ICOMOS	:	International Council on Monuments and Sites
JKKK	:	Village Development and Security Committee
KALAM	:	Centre for the Study of Built Environment in the Malay World
KPKT	:	Ministry of Urban Wellbeing, Housing and Local Government
KUTAI	:	Centre for Knowledge and Understanding of Tropical Architecture and Interior
LGD	:	Local Government Department
MTIB	:	Malaysian Timber Industry Board
MYR	:	Malaysian Ringgit
NHA	:	National Heritage Act
NHD	:	National Heritage Department
NOSS	:	National Occupational Skills Standard
NSM	:	Negeri Sembilan Museum
NSTMH	:	Negeri Sembilan Traditional Malay House
NSTMH-CPF	:	Negeri Sembilan Traditional Malay House Conservation Principles Framework
OAM	:	Open Air Museum
PERZIM	:	Melaka Museum Corporation
SHEP	:	Scottish Historic Environment Policy
TMH	:	Traditional Malay House
UIA	:	Universiti Islam Antarabangsa
UiTM	:	Universiti Teknologi MARA
UKM	:	Universiti Kebangsaan Malaysia
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
UPM	:	Universiti Putra Malaysia
UTM	:	Universiti Teknologi Malaysia

# CHAPTER 1

## INTRODUCTION

### 1.1 Research Background

Vernacular structures all around the world are facing serious problems of dilapidation and are extremely vulnerable (Charter on the Built Vernacular Heritage, ICOMOS, 1999). Vernacular means traditional and domestic (further explanation in section 2.2.1). Oliver (1997) highlighted that particularly this built vernacular heritage is unprotected and not properly conserved in most parts of the world. The Scottish public body Historic Environment Scotland states that natural processes such as climate change and erosion, combined with human intervention, are continually eroding or changing the natural environment and contributing to the natural processes of change and decay of vernacular structures (Scottish Historic Environment Policy (SHEP), 2011). The importance of conserving this built vernacular heritage has been accepted as an important expression of culture, a reflection of society that is characterised by its original surroundings and territory, built in a traditional and natural way that represents its local distinctiveness. This is also expressed in the Burra Charter (2013):

It reflects the places of cultural significance that provide a sense of connection from the past that shows an evidence of important historical records of the diversity of community, identity, experience, which are irreplaceable and precious.

*(Burra Charter, 2013, pg. 1)*

The participation of local people in addition to the continuity in use and maintenance by the occupants are essential for the successful protection and appreciation of vernacular heritage. In order for this to occur, however, any

fundamental problem should be addressed not only by local people but also has to be supported by a multidisciplinary group of stakeholders, including, for example, governments, professionals (architects/planners) and specialists (conservationists/*Tukang*/timber experts). An overall understanding of the physical form, fabric, function, uses and changes of the vernacular heritage should be well understood, including its meanings as an integrated part of the cultural landscape. This was also highlighted in the Burra Charter (2013), which states that,

It must be conserved for present and future generations in accordance with the principle of inter-generational equity.

*(Burra Charter, 2013, pg. 1)*

Vellinga et al. (2007) also point out that the survival of the vernacular architecture is threatened, especially in regard to the erosion of local cultural values in the built environment. Human factors also contribute to the abandonment of vernacular buildings, often prompted by rapid modern development that forces a community to migrate and abandon their houses (Vellinga et al., 2007). Some of the threats and challenges facing the preservation of vernacular buildings result from the economic and social and cultural values promoted by rapid modernisation, as also changes in house form, poor timber properties (defects and natural decay), diminishing resources and traditional skills, inappropriate use of modern materials and vulgarisation (Lim, 1987). The conflict between the conservation of past traditions and the necessity for socioeconomic advancement is a dilemma faced by every developing nation such as Malaysia (Lee, 2003).

These changes need to be determined whether they constitute challenges to the conservation of the traditional Malay house (TMH from now on). The TMH is a vernacular architecture form of Malaysian traditional heritage (Figure 1.1). It is a Malay architecture (Hilton, 1956) and rural dwelling (Hilton, 1992) that was formed within the Malay society, and their culture. For example, the TMH exhibits the journey of a man's life. (Yaakub, 1996)

There is a very large regional diversity in the style and specific characteristics of the TMHs that exhibit architectural values in their adaptability to local



environmental and cultural conditions. It is part of the ‘umbrella’ definition of vernacular architecture, which categorises methods of construction that address local needs by using locally available materials and traditions (Hilton 1956; Lim 1987). Although the TMH has evolved through many generations of Malay society, which itself has undergone many transformations very early, the TMH nowadays faces many challenges for its survival and enjoyment for future generations. This also includes the conservation aspect of the buildings.

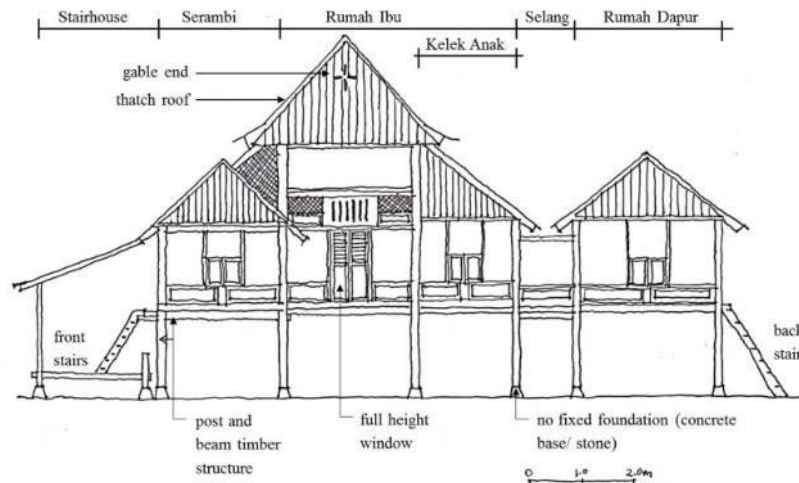


Figure 1.1: Example of the Traditional Malay House  
Source: Author (2014)

Conservation is a process designed to prevent decay and retain the importance of a cultural property, protecting it from damage and loss for utilisation in both the present and future (Orbasli, 2008; Feilden, 2003). It requires minimum intervention and a reversibility approach (Feilden, 2003) in terms of the original fabric of a building. The scope for conservation of the built environment is very wide, and ranges from vernacular architecture to the preservation of very well-kept public buildings , but its setting and context are a significant reflection of the patterns of its past uses important to their sense of place and cultural identity that form part of their historic environment (SHEP, 2011).

Restoring the threatened vernacular architecture in modern Malaysia could according to Asquith and Vellinga (2006) play a role in current and future attempts to create an appropriate sustainable built environment for all. As a developing country, Malaysia faces increasing demands for modernisation, which affects the existence of

its traditional houses so it is vital to ensure the survival and sustainability of its built heritage. Such survival depends greatly on the formation and implementation of effective conservation legislation and practices.

Building conservation practice in Malaysia is still new, and there are several issues regarding historic buildings (Kamal et al., 2008). Although legislation on conservation has been established, such as the National Heritage Act (NHA) 2005, it has yet to be implemented and enforced, and is also not sufficient to protect buildings from being heavily refurbished or demolished (Ismail and Shamsuddin, 2005; Kamal et al., 2008). Moreover, the NHA 2005 does not extend to cover the TMH. Furthermore, there is uncertainty about the future of heritage buildings in Malaysia, although Malaysia is a member (State Party) to the 1998 World Heritage Convention (Ahmad, 2008).

Professionals and policymakers have a greater role in enhancing sensitivity towards conservation. This is important for example in cases of unnecessary demolition (Ahmad, 2008) and unpredictable actions by ignorant people who have the potential to ruin everything. Kamal et al. (2008) also stated the need for guidance from agencies or professionals on selecting an appropriate approach, with the correct methods, techniques and materials.

The mantra ‘prevention is better than cure’ can help to prevent damaging situations from becoming worse and in line with Kamal et al. (2008) building owners should put more effort into caring for their buildings, especially in dealing quickly with defects. Other contexts, like that of Scotland, also point out (SHEP 2011) that it is private owners who are responsible in preserving the physical fabric of the historic environment.

In recent years, a considerable amount of research and interest has focused on various aspects of TMHs, such as their embellishment, the environmental, technical, cultural and typological aspects and the perceptions and interventions to which they are subjected. These include the environmental context, such as the re-adaptation of Malay house thermal comfort design elements in the modern context (Ramli, 2012),

the integration of modern technologies and traditional approaches for sustainable architecture (Lim, 2012) and an indicator for sustainability (Amat et al., 2006).

Furthermore, some studies have investigated their embellishment, such as the adaptation and relocation of wood carvings from the TMH into modern houses (Kamarudin and Said, 2008 and 2011), the use of TMHs' wood carvings as daylight-filtering devices (Denan et al., 2015) and also decorative elements to restore the design, thereby promoting Malay architecture and heritage (Yusoff and Kadir, 2010). Studies have also focused on technical aspects, such as timber defects and deterioration (Ishak et al., 2012), the framework for appropriate repairs in a traditional timber mosque (Johar et al., 2013), but not in the TMH, and preservation of the Malay *singgora* roof (Hassan and Harun, 2013).

Other studies have examined future benefits and the interventions required for the TMH, such as: creating a typology framework of the *tanggam* system (a method of joining timber elements using an interlocking joining system like mortise and tenon joints) for the future (Sabil and Utaberta 2011), evaluation of a low-rise house based on the design and construction flexibility of the TMH (Utaberta and Spalie, 2011), re-inventing the raised-floor concept of the TMH in a new, sustainable house design (Tahir et al., 2009) and an innovative systematic recording (for built forms) in a digital database for future reference (Said and Embi, 2007).

The typological aspects and the development of a basic understanding, has concentrated on the evolutionary history of Peninsular Malaysia's vernacular house form (Lee, 2003), as well as the typological rules system: the formation of rules and their variations (spatial and construction) (Chen et al., 2008); understanding the vocabulary of its elements, rules and changes (Wan Abidin, 1984; Said and Embi, 2008) and the modernisation process of the typologies of the wider vernacular Malay houses (Ju et al., 2012).

A study was undertaken of the cultural approaches to the Melaka Malay house, demonstrating the influence of modern Western architecture in diminishing or extinguishing the traditional elements of Malay houses, with only a few remaining (Talib and Sulieman, 2012). Besides these, there are studies of misconceptions relating

to the Negeri Sembilan Traditional Malay House (NSTMH), focusing more on a comprehensive literature review and perception survey (Masri, 2012). It was due to its unique identity that gradually disappearance was endangering future identity's ownership in cultural built environment in Negeri Sembilan. The Malaysian public's perceptions of heritage buildings' conservation in Kuala Lumpur was also highlighted by (Azhari and Mohamed (2012) that the public's lack of knowledge of and exposure to any conservation efforts.

## **1.2 Problem Statement**

From the literature mentioned in item 1.1 related to research on the TMH, the conservation aspect has only recently been highlighted by Rahman et al. (2015) in terms of residents' preference for the conservation of the Malay traditional village in Kampung Morten, Malacca but the issue of conservation of the TMH was firstly highlighted by Mubin Sheppard as early as the 1950s when he became British Adviser in the state of Negeri Sembilan. He initiated the process and was responsible for the conservation of the first timber building. Ampang Tinggi Old Palace (built in 1865), as it was then known, a ruin at the time that had been vacant since 1930 and was later converted to the Negeri Sembilan State Museum. In his 1981 paper, *Towards National Identity in Architecture*, translated by Ali (2010), Sheppard stated that:

Unfortunately, almost all traditional Malay buildings more than 100 years old have been dismantled. In the last 25 years, many historical and beautiful timber buildings have been dismantled by their owners and no one is taking action to save them. Therefore, this country has suffered such a great deal of loss. (p. 86)

This statement is significant as a starting point for this research, as the situation that it outlines remains to this day. In addition, Rahman et al. (2015) also highlighted the need for guidance on conserving TMHs to protect them from being abandoned, while at the same time preserving Malay cultural practices. Furthermore, there has been little research on the challenges of the conservation of the TMH from the perspectives of the house owners or professionals in the field. Further questions that

need to be made are how do the changing patterns of the TMHs' form, fabric and function contribute to the challenge of preserving them? Are there any particular pieces of heritage legislation, charters or principles that protect TMHs in particular or vernacular timber architecture in general (at both a local and international level)?

In Malaysia, particularly in the state of Negeri Sembilan, survival of the vernacular architecture is also threatened due to socioeconomic transformation, loss of its characteristics as a result of increasing changes and development, as well as the serious issues of abandonment and obsolescence that impact the NSTMH. Many of the NSTMHs, some more than 100 years old, are not protected. Very few have been conserved as heritage structures compared to other types of colonial buildings, and a mere five out of more than 300 buildings have been gazetted as National Heritage or Heritage in Malaysia. As of today, the NSTMHs are slowly being abandoned and are becoming derelict, thereby threatening the survival of the vernacular values of their fabric and the conservation for future generations of such a responsive and traditional way of life.

In addition, Negeri Sembilan does not currently have any Acts or Provisions regarding its built heritage environment, and certainly no policy or guidance that protects the TMHs or timber buildings. In retrospect, these Acts and Enactments have been rather insufficient, especially in addressing the conservation of traditional timber buildings in Malaysia in an integrated manner. Mohammad (2011) also highlighted the fact that there are no specific guidelines for conserving timber heritage buildings in Malaysia.

### **1.3 Research Aims**

The primary aim of this research is to generate an understanding of the challenges involved in conservation of the NSTMH from the perspective of both house owners and conservation experts. It is also essential to investigate how the findings may be related to the changing patterns of form, fabric and function of current NSTMHs that have evolved from their original design and the challenges pertaining to their conservation. In order to obtain an overall picture, existing local and national heritage

legislation (TMH), as well as related international conservation principles, were also reviewed. The broader aim of this research is to enable the findings to be directly translated into recommendations for guidance in the form of a conservation principles framework for the NSTMH in order to safeguard this valuable heritage of Malaysia.

#### **1.4 Research Question and Objectives**

In order to achieve this research aim, the research question and objectives of the study are formulated around the exploration of how a holistic conservation environment can be established, as follows:

How do the challenges in the conservation of NSTMHs, as seen from the perspectives of the house owners and experts and relating to the evidence obtained from onsite observation of the changes and review of heritage documents, aid in the establishment of an appropriate guidance framework for conservation of the NSTMH?

The following objectives apply to the realisation and answering of the research aims and question, respectively:

1. To identify the challenges facing the conservation of the NSTMH from the perspective of the house owners and experts.

This research will pursue a line of inquiry, firstly by speaking directly to the house owners themselves to explore their actual situations regarding the challenges posed by issues of conservation; and secondly, by surveying the understanding of the experts (private and government agencies) responsible for conservation and their views on the conservation of the TMH, to identify strategic challenges that will lead to an understanding of their perception from a micro perspective. This will provide a platform from which to understand how these findings can be used to examine the changing patterns of the house.

This is supported by Najafi et al. (2011), who state that the challenges posed by the conservation of timber structures need to be tackled by understanding the users within their environment, focusing on an understanding of the core values and the importance of appreciating these historic buildings.

2. To examine the changing patterns of form, fabric and function of the current states of the NSTMH that have evolved from the original design and that affect its conservation.

Analysing the changing patterns of form, fabric and function of the selected NSTMHs will lead to an understanding of how these changes are taking place in actual situations in the form of concrete evidence obtained on-site. This reflection of the changes will determine the potential strategy for minimising disturbance to the original form and fabric.

3. To investigate any lacks of protection of NSTMH or TMH in existing local and national heritage legislation and to explore an ideal approach from international context of protecting timber structures that best suits to the local needs.

It is important to explore both the local and international contexts by identifying a suitable approach that can be adapted to the context of the NSTMH.

4. To establish a Conservation Principles Framework for the NSTMH

The aim of this stage is to gather all of the findings from the triangulation of the three methods (objectives 1, 2 and 3) in order to develop the initial framework.

5. To validate a Conservation Principles Framework for the NSTMH.

A validation process is a process within the research that highlights the importance of relevant experts' input to verify and validate the proposed guidance. It will also strengthen and justify the validity of the research.

These objectives are also relevant to the Charter on the Built Vernacular Heritage (ICOMOS, 1999), which states in its principles of conservation that more of an approach needs to be taken to using and understanding the traditions, the intangible, associated with and attached to the physical form and fabric of the buildings. This is not merely about the building itself, but about the whole context of the built environment that grows with it, and includes those people living in the houses and the culture itself.

## **1.5 Scope of the Research**

This research employs a qualitative approach through an examination of selected historic 19<sup>th</sup>-century long-roofed NSTMHs built more than 100 years ago, as a purposive sampling of which information and surveys are available. The research methods consist of semi-structured interviews with the house owners and conservation experts and on-site surveys of their changing patterns of form, fabric and function. The data will be analysed to identify more specific themes alongside interpretive sketches of the building surveys regarding patterns of alterations.

Furthermore, documentation relating to the context of local and international conservation heritage legislation (i.e. principles, charters, acts and guidelines) of vernacular timber-built heritage will be reviewed through template analysis. The findings of the above methods will be triangulated to achieve the research objectives and answer the research question.

In order to define the focus of the research, preliminary studies were carried out during the autumn of 2013. Firstly, a visit to the Centre for the Study of Built Environment in the Malay World (KALAM), Universiti Teknologi Malaysia, where the NSTMHs to be surveyed were identified from a list of measured drawings. The accompanying report for each case is an important document, and the maps and plans contained were used to identify the potential NSTMHs as research case studies. Around 43 houses were selected and subsequently filtered to a feasible number of 26 houses for observation and 18 interviews were conducted with house owners.



From these preliminary findings, a classification of the house owners into these categories was undertaken: a) resident house owners, b) resident caretakers, c) non-resident house owners with non-resident caretakers and d) abandoned. At the same time, interviews were carried out with selected experts, mainly from government agencies of the Negeri Sembilan Museum (NSM), Melaka Museum Corporation (PERZIM), National Heritage Department of Malaysia, the Director of the Centre for Study of Built Environment in the Malay World (KALAM) and also academics, to explore a range of topics regarding conservation of the NSTMH in particular and TMH in general.

These data formed the basis of further detailed analysis prior to the main fieldwork taking precedence, carried out in the summer 2014. The observations were filtered according to the needs of the research. Interviews were carried out with the owners as well as experts, the latter group including conservation architects, conservators, contractors, timber experts, academics and the *Ketua Kampung* (headmen of village). Visits were also made to the National Archive Centre, the Malaysian Timber Industry Board and the Forest Research Institute of Malaysia to obtain a broader picture of the research aims.

## **1.6 Significance of the Study**

The Malay house as a cultural artefact reminds us of a traditional way of life that is rapidly disappearing and the significance of the Malay house as a cultural icon where the Malay house is the classical house design prototype suitable for the hot and humid tropical climate of Malaysia.

*(Ken, 2014, p.11)*

The above statement made by Dato' Dr Ken Yeang, a famous architect in Malaysia, in the book *Rumah: An Ode to the Malay House* by Effendi (2014) highlighted the importance of the existence of this type of house in Malaysia's current modern society.

The statement is also very significant to this research, which intends to expand the existing body of knowledge via an exploration of how the house owners

understand, value and appreciate heritage within their own environment, i.e. their houses, as well as exploring the context of the professionals and authorities in the same regard. Furthermore, the main contribution of this study is towards the creation of a form of guidance, probably, a conservation principles framework for the NSTMH that may be used by house owners, conservation experts, officials including the Negeri Sembilan state government, authorities and the Negeri Sembilan Museum (NSM), the Village Security and Development Committee, academics and students as a form of guidance for the implementation of conservation works in Malaysia. Each of them has different priorities and roles, especially the NSM who has very peculiar positions in the state dealing with cultural heritage and built heritage environment in Negeri Sembilan.

It is also hoped that this guidance may be a starting point for the Negeri Sembilan state government to develop specific legislation to safeguard this Malaysian heritage.

## **1.7 The Thesis Structure**

The thesis is structured into eight chapters as illustrated in Figure 1.2, and is organised as follows:

### **CHAPTER 1: INTRODUCTION**

This chapter presents the context of the research, comprising a detailed research background of the study area and formulation of the research aim, questions and relevant objectives around establishing a holistic conservation environment. It also explains how the scope of the study was made manageable through restricting the research to a set of refined elements which make up the framework of conservation principles.

### **CHAPTER 2: LITERATURE REVIEW: NSTMH AND ITS CONSERVATION**

Chapter two focuses mainly on the review of literature and current research framework which highlighted the NSTMHs and its conservation. The literature is divided into

several themes, such as the concept of vernacular architecture, broad research on the TMH, or conservation practice and the challenges it faces in the Malaysian context. These themes provide a detailed explanation of the terminology, the built form of the TMH and NSTMH, the context of the NSTMH as a focus area, and challenges, changes and managing change that have occurred in the TMH as well as the importance and engagement towards the conservation of the TMH. Thus is followed by discussion around the TMH conservation effort throughout Malaysia, and investigation into the local acts that focus on the vernacular architecture of TMHs. The theoretical background provides a summary of the importance of conserving the architectural and historical values of these vernacular structures.

### **CHAPTER 3: LITERATURE REVIEW: PRINCIPLES AND VERNACULAR CONSERVATION PRACTICES**

Chapter three focuses on the review of literature of principles and vernacular practices. There will be a general discussion about the existing international conservation principles in the context of vernacular timber architecture from a broader perspective, to determine if they can be adopted in a local context. A collection of the experiences of other similar cultures (other countries) such as open air museums and adaptive reuse were explored in order to understand successful approaches that might be adapted to this research. This also includes an overview of the relocation concept which has been an established practice in Malaysia. The theoretical background also provides a summary of the relevant principles and the best practices that can be adapted towards a broader conservation in the context of NSTMH.

### **CHAPTER 4: RESEARCH METHODOLOGY**

This chapter discusses and justifies the choice of the methodology used in this research. It covers an overview of the study's qualitative research approach using multi-methods which involve interview with the house owners and experts, on-site observation of the changing pattern of the form, fabric and function of the NSTMH and document reviews of heritage legislation (local, national and international). Thematic analysis (interviews), analysis of pattern (observations) using Matero's concept model of cultural heritage and template analysis (document reviews) are

discussed in analysing the data of the study. The research process is also included in this chapter as well as the issue of trustworthiness.

## **CHAPTER 5: IDENTIFYING CHALLENGES TO THE CONSERVATION OF THE NEGERI SEMBILAN TMH FROM THE PERSPECTIVES OF HOUSE OWNERS AND EXPERTS**

This chapter explains the different perspectives of the participants identified (house owners and experts) in understanding the challenges facing the conservation of NSTMHs according to several themes. The backgrounds and categorisation of the research participants were also explained. The chapter discusses the findings from the house owners and experts on how they contribute to facing the challenges of conserving TMHs. The chapter summary also provides the key finding for the first objective of the research.

## **CHAPTER 6: EXAMINING THE CHANGING PATTERN OF THE FORM, FABRIC AND FUNCTION OF THE NSTMH**

This chapter discusses the key finding for the second objective of the study. It provides on-site evidence gathered whilst interviews with the house owners were being conducted, as also observations of the changes that had been made on the characteristics of the house, both physically and socially. The evaluation is based on interpretation of the sketches of the layout plans and photos taken.

## **CHAPTER 7: INVESTIGATING THE EXISTING CONSERVATION PRINCIPLES REGARDING TIMBER HOUSES IN A MALAYSIAN AND INTERNATIONAL CONTEXT**

This chapter presents key findings from the appraisal and synthesis of the existing heritage legislation, conservation principles and local and international charters in vernacular timber architecture, before mapping the conceptual conservation framework of the findings to achieve the third objective of the study. It is based on document review.

## **CHAPTER 8: DEVELOPING A CONSERVATION PRINCIPLES FRAMEWORK FOR THE NEGERI SEMBILAN TRADITIONAL MALAY HOUSE (NSTMH-CPF)**

This chapter brings the results from Chapters 5, 6 and 7 together to draw out the key findings and relate these to the main question posed and to the wider literature. The key findings of the three methods (interviews, observation and document reviews) were triangulated prior to developing the initial framework for the research in order to answer the fourth objective of the research.

## **CHAPTER 9: VALIDATION OF THE ‘NTSTMH CONSERVATION PRINCIPLES FRAMEWORK’ (NSTMH-CPF)**

This chapter discusses the validation process of the initial framework (chapter 8). Experts were chosen to verify its significance in the local or broader context and its applicability. The NSTMH-CPF is presented as a final product to satisfy the fifth objective of the research.

## **CHAPTER 10: CONCLUSION**

This chapter summarises the main conclusions that can be drawn which highlight a need for a holistic management and dynamic nature approach to protecting and conserve the NSTMH from the preceding analysis and discussion and outlines the limitations and contribution of the research, together with some suggested recommendations and potential applications for future studies.

<b>Focus of Research</b>	<b>CHAPTER 1</b> Introduction
	<b>CHAPTER 2</b> Literature Review: The NSTMH and Its Conservation The concept of the vernacular architecture, the built form of the TMH and NSTMH, the challenges, changes and managing change in TMH, importance and engagement towards conservation, the conservation practice in Malaysia
<b>Background: Literature Review</b>	<b>CHAPTER 3</b> <u>Literature Review: The Principles and Vernacular Conservation Practices</u> Principles focusing on timber houses, the collection of experiences from other similar cultures, and the relocation concept
	<b>CHAPTER 4</b> Research Methodology
<b>Methodology</b>	<b>CHAPTER 5</b> Identifying the Challenges of the Conservation of the Negeri Sembilan TMH from House Owners and Experts Perspectives
<b>Analysis, Findings and Discussion</b>	<b>CHAPTER 6</b> Examining the Changing Pattern of the Form, Fabric and Function of the Negeri Sembilan TMH
	<b>CHAPTER 7</b> Investigating the Existing Conservation Principles Regarding Timber House in a Malaysian and International Context
	<b>CHAPTER 8</b> Developing a Conservation Principles Framework for the NSTMH (NSTMH-CPF)
<b>Validation, Final Conclusions and Recommendations</b>	<b>CHAPTER 9</b> Validation of the Conservation Principles Framework for the NSTMH (NSTMH-CPF)
	<b>CHAPTER 10</b> Conclusion

Figure 1.2: Summary of the thesis structure

## **1.8 Chapter Summary**

The research background and scope of this research have been set around the problem of the vernacular architecture survival that is threatened due to many factors including its conservation especially in the context of NSTMH. Accordingly, the essential research elements for this thesis are the research aims, question, and objectives; that focuses on the establishing the conservation principles framework for the NSTMH. The significance of the study highlights the important in conserving the NSTMH and expanding the existing body of knowledge to safeguard this Malaysian heritage through the thesis structure explanation.





## **CHAPTER 2**

### **LITERATURE REVIEW: NSTMH AND ITS CONSERVATION**

#### **2.1 Introduction**

This first section summarises the literature review of previous research work relevant to this particular study in the context of NSTMH and its conservation which is divided into several themes such as the vernacular architecture of Malaysia; the built form of the vernacular architecture of the TMH; Negeri Sembilan - The context of the NSTMH; the challenges in the conservation of the TMH (NSTMH); changes in the vernacular NSTMH; managing change, the importance of the vernacular architecture of the NSTMH; engagement towards the conservation of the NSTMH and conservation practice in Malaysia

For the second part of the literature review (Chapter 3), the focus is more on the principles and vernacular conservation practices.

#### **2.2 The Vernacular Architecture of Malaysia**

##### **2.2.1 Terminology**

The word ‘vernacular’ is derived from the Latin word *vernaculus*, which means domestic, native and indigenous. It places more focus on ‘place’ than on ‘time’ (Rasdi, 2005). For Stewart Brand (1994), vernacular means ‘the indigenous building of a place’. Vernacular also means the process of how it is designed and built (Rapoport, 1969) and ‘the architecture of the people, and by the people, but not for the people’ (Oliver, 2006). It also indicates the contrast between craftsmanship and organised professional contractors, a distinction that became clear in the modern world. According to Glassie (2000), vernacular is ‘one of the tools we use when we face architectural objects with a wish to crack them open and learn their meanings’ (p. 21). As described by Frank Lloyd Wright in Oliver (1997), vernacular means, ‘folk

building, growing in response to actual needs, fitted into the environment by people who knew no better than to fit them with native feeling' (p. 9).

The Encyclopaedia of Vernacular Architecture of the World (Oliver, 1997) defines vernacular architecture as,

...comprising the dwellings and all other buildings of the people. Related to their environmental contexts and available resources they are customarily owner- or community-built, utilizing traditional technologies. All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of life of the cultures that produce them. (p. xxiii)

Vernacular architecture also means a type of architecture that is based on local needs and construction materials, reflects local traditions and is indigenous to a specific time or place. Timber architecture or vernacular buildings demonstrate a unique culture (Charles, 1984) that requires a deeper understanding of the uses and functions associated with them (Vellinga et al., 2007), as well as social structures which are influenced by the status of the people that inhabit them. The timber frame is exposed through the fascinating, detailed geometries of its architectural and structural elements as compared to masonry building. This shows that the TMH is unique visually and culturally, and reflects the skills of the *Tukang*, who could do such substantial buildings. It is also part of the ritual and philosophical way of seeing it, creating a much more intimate link between the owners and the fabrics. The complexity and intricacy of vernacular architectural design plays a major role in differentiating between people of wealth and position, and commoners.

### **2.3 The Built Form of the Vernacular Architecture of the Traditional Malay House (TMH)**

Malaysia is a country in South East Asia, geographically located in the equatorial region and is characterised by hot tropical weather with high humidity levels and heavy rainfall throughout the year. As a developing country, Malaysia seeks to conserve not only its green and humid tropical rainforests, but also the lifestyle, traditions and

religions of its multiculturally diverse population. Culturally, the unique multi-ethnic society has enriched the nation's socio-cultural fabric that represents the uniqueness of Malaysia, which is also reflected in the existence of the tangible and intangible heritage that serves to further enrich the Malaysian identity.

One of the richest elements of Malaysia's tangible cultural heritage is the traditional Malay House (TMH from now on). The TMH represents the culture of the Malays, the predominant ethnic group (also called Bumiputera) in Peninsular Malaysia, comprising approximately 63.1% of the total Malaysian population. According to the Department of Statistics (2010), Malaysia's total population is 28.3 million, comprising 67.4% Bumiputera, 24.6% Chinese, 7.3% Indians and 0.7% others (Department of Statistics, 2010).

The significance of conserving the TMH is due to the uniqueness of its built form. This traditional house is an indigenous Malay vernacular type with a huge range of diverse regional styles and specific characteristics that portray high architectural values in their adaptability to local environmental and cultural conditions. Designed and built by ordinary villagers, this vernacular building highlights the creative and aesthetic skills of the Malays prior to the onset of modern technological influences. Houses were constructed using locally available material such as hardwood timber and feature traditional methods of joinery that do not use nails. Metal nails were not used for construction, not because they were cost prohibitive, as claimed by Killman et al. (1994), but because lack of availability of nails in former times meant that houses were deliberately built without them. The methods of construction without using nails offered the benefit of flexibility in that without nails, a house could be dismantled and reassembled in a new location.

The unique aspect of this type of house is its rich architectural qualities that represent flexibility in design and construction, multifunctional use of space and a sophisticated prefabricated system of extending the house. It was agreed by Hilton (1992) that the Malays have been pioneering modularisation of their traditional houses for hundreds of years, prior to any such ideas being discussed and presented in academic architectural journals. The concepts of prefabrication and modular construction have been applied in houses built by Walter Segal in the London area,

using the concept of the raised floor on sloping land, thereby reducing costs. Furthermore, the sensitivity of the Malay in balancing the flexibility approach of design and construction led indirectly to the creation of a simple mathematical theory which is expressed empirically using of the human body as a basic concept of measurement (Utaberta and Spalie, 2011).

According to Said and Embi (2007), the TMH consists of three main elements: physical, spatial and functional. The characteristics of the houses can be seen through the physical manifestation of its elements, especially with regard to its layout and form. The basic type of Malay house can principally be recognised by its steeply pitched roof (Oliver, 1997) and straightforward structure made of timber posts and beams, which is in complete contrast to the stud wall (Hilton, 1992), in addition to it being built on stilts with an elevated floor (Figure 1.1). According to Killman et al., 1994), other similar types like the Northern European framework house is also different from the TMH in terms of the principles of the triangle brace roof truss.

The traditional construction of the TMH consists of a series of columns connected by horizontal cross braces which support both the floor and the roof. They rest on natural stone, laterite stone or concrete footings in order to keep them from decay and off the wet ground (Figure 2.1).



Figure 2.1: Variations in the footings used in construction of the NSTMH  
(Source: Author, 2014)

This type of characteristic is common in vernacular architecture, as it provides defence and protection, safeguards against the risks posed by flooding and wild animals and at the same time increases shade and provides cooling for the building (Vellinga et al., 2007; Idrus, 1996; Lim, 1987; Hilton, 1956). Other features of the TMH are its full-length louvered windows, high roof with ventilation openings (gable ends) and use of low thermal conductivity materials (Figures 1.1 and 2.6). These characteristic features ensure that the TMH blends in well with the surrounding environment of the village.

The essential elements of the TMH and Negeri Sembilan Traditional Malay House (NSTMH from now on) are identified in Table 2.1, and the characteristics of the NSTMH as compared to another type of TMHs in Malaysia are also shown in Table 2.2. The NSTMH which is the main case in this research, were further explained in section 2.4.1.

Table 2.1: Essential elements of the TMH and NSTMH  
(Source: Adopted from (Lim, 1987, Idrus, 1996, Nasir, 2011))

No.	Basic Element of TMH	Functions	Elements of NSTMH
1	<b>Rumah Ibu</b> (Core House)	<ul style="list-style-type: none"> <li>Core area largest</li> <li>The highest floor level compared to other areas (to signify its social hierarchy)</li> <li>Most activities conducted (sleeping, sewing, praying, studying, feasting)</li> <li>High headroom</li> <li>No ceiling (cloth sheet to catch dropping from the attap roof)</li> <li>Space divided into one bedroom separated by a <i>tabir</i> or a curtain and reserved for the head of family and his wife</li> <li>The floor level is the highest (the important part expressed in the house).</li> <li>It is a private area</li> <li>Exclusively for family members</li> <li>Sometimes has an Attic (store) as in Negeri Sembilan and Melaka house.</li> </ul>	
2	<b>Serambi</b> (Verandah)	<ul style="list-style-type: none"> <li>Long and long verandah (narrow area)</li> <li>Next to <i>Rumah Ibu</i> (guest entertained area)</li> <li>Headroom is low due to roof lean onto the <i>Rumah Ibu</i> structure</li> <li>Low windows allow good ventilation and views</li> <li>Lower than <i>Rumah Ibu</i> level.</li> <li>First area, greets a visitor</li> <li>Entertaining guests</li> <li>Often half closed with walls at one end (Melaka), completely closed by walls and ventilated by windows (elsewhere)</li> <li>Transition space (from main entrance to <i>Rumah Ibu</i>)</li> <li>Three parts (<i>Pangkal Serambi</i>-front porch, <i>Serambi Tengah</i>-middle porch and <i>Hujung Serambi</i>-end porch) as in Negeri Sembilan house.</li> <li>Use as gathering space for male and family activities.</li> <li>Persons of different social status occupy different sections of the <i>Serambi</i>.</li> <li>The background of the <i>Serambi</i> which is a decorated timber wall is embellished with fine and beautiful carvings of various floral motifs.</li> <li>This wall separates between <i>Rumah Ibu</i> and the <i>Serambi</i> and connected by a thick, decorated timber door (<i>Penak</i> wood)</li> <li>Conceptually, the segregation of <i>Serambi</i> into <i>Pangkal</i>, Middle and <i>Hujung</i> (End) are to show the meaning of the status of that space and the house owner.</li> <li>The End <i>Serambi</i> is the most noble as compared to Middle and <i>Pangkal</i> (the lowest).</li> </ul>	
3	<b>Rumah Dapur</b> (Kitchen)	<ul style="list-style-type: none"> <li>Situated at the back</li> <li>Cooking, washing and eating</li> <li>Meals taken on the floor</li> <li>The lowest level</li> <li>Dropped to ground floor (modern)</li> </ul>	
4	<b>Anjung</b> (Covered porch)	<ul style="list-style-type: none"> <li>Focal point</li> <li>Main entrance with stairs (covered by a simple lean-to roof)</li> <li>Acts as a good transition space between the public and private domains</li> <li>Conceptually, the <i>Anjung</i> in Negeri Sembilan house represent the meaning of the status of the house owner..</li> </ul>	

Table 2.1: *Cont.*

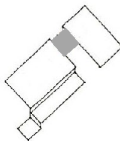
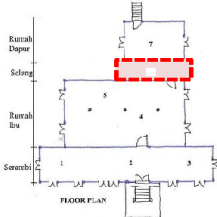
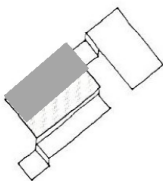
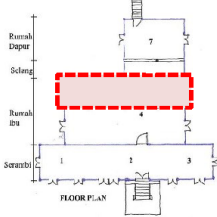
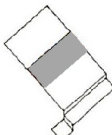
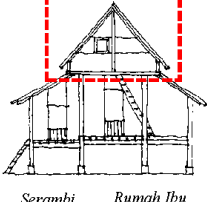
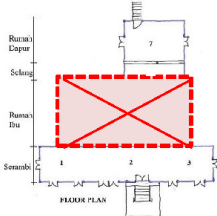
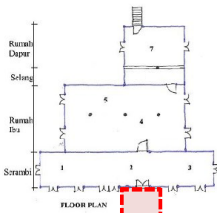
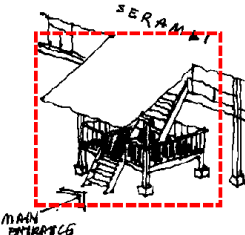
5	Selang		<ul style="list-style-type: none"><li>• Close walkway to link <i>Rumah Ibu</i> and <i>Rumah Dapur</i></li><li>• As side entrance (female guests)</li><li>• Sitting and chatting</li><li>• Act as firebreak between two spaces</li></ul>	
6	Serambi naik/gantung/ Kelek Anak sama		<ul style="list-style-type: none"><li>• As circulation to <i>Selang</i> to Kitchen, same level as <i>Rumah Ibu</i></li><li>• Side of <i>Rumah Ibu</i></li><li>• For female guest and doing leisure works likes weaving and plaiting</li></ul>	
7	Pelantar		<ul style="list-style-type: none"><li>• Open platform</li><li>• Washing area</li></ul>	No
8	Courtyard		<ul style="list-style-type: none"><li>• Private internal and enclosure open space (between <i>Rumah Ibu</i> and <i>Rumah Dapur</i>)</li><li>• Decorated with plant/flowers</li><li>• Normally found in Melaka traditional house</li><li>• Floor usually a raised concrete platform</li><li>• Wet and drying activities</li></ul>	No
9	Loteng (Attic)	 <p>Serambi Rumah Ibu</p>	<ul style="list-style-type: none"><li>• The lifting up space of the <i>Rumah Ibu</i> roof.</li><li>• Commonly found in Negeri Sembilan and Melaka boundary.</li><li>• Used as sleeping area for unmarried women.</li><li>• Now, no longer practiced and used for storage.</li><li>• Sometime creating a two-storey building.</li></ul>	
10	Rumah tangga		<ul style="list-style-type: none"><li>• In front before the main entrance of the house.</li><li>• Covered by a <i>bumbung pisang sesikat</i> (lean-to-roof)</li><li>• Use as resting area, waiting place for visitor before being invited in.</li><li>• The staircase was decorated at the top part (symbolic introduction upon entering the house)</li><li>• Entrance staircase directed to downstream (concept of laying a fish trap by placing the opening facing the downstream. If the opening facing upstream, it will only be littered with rubbish. The symbolic concept was manifested in the orientation of the entrance staircase. The correct orientation will bring in good fortune.</li><li>• The number of threads must be odd in numbers. (The first step with right leg will also enter the house with right leg. (Bring good fortune). This is because Muslim believes that it is considered righteous to begin anything with the right side.</li><li>• It is not situated at the middle of the house.</li><li>• Normally at the <i>hilir</i> (east) of the <i>Serambi</i> and the main entrance is normally a little bit at the <i>hulu</i> (west)- side of the <i>Serambi</i>. It is very seldom situated at the center of the house.</li></ul>	  <p>SERAMBI</p> <p>MAIN ENTRANCE</p>

Table 2.1: *Cont.*

		<ul style="list-style-type: none"> <li>• The placement of the spaces inside the typical Malay house is not asymmetrical. Only in the palace they have the symmetrical layout, but the stair is remained at the side of the house</li> <li>• If the guest is high status, he will go straight to the <i>Hujung Serambi</i> and probably sit in the middle of <i>Serambi</i>, facing outside the house to the yard. If the member of the house, he will go straight away to the inside <i>Rumah Ibu</i> and <i>Rumah Dapur</i>.</li> <li>• There is also affect from the social and religious influences.</li> <li>• Other than that, there is also factor influencing of the Malay culture like respect the older people.</li> </ul>
11	Main entrance	<ul style="list-style-type: none"> <li>• Orientated facing the rising sun (will bring in a lot of good fortune) to the household.</li> <li>• Two door leaves (horizontally or vertically)</li> <li>• Low height- purposely designed, visitor have to lower down their head (symbolizing a sign of respect for the house owner)</li> <li>• Door: made of timber (<i>Merbau</i>, <i>Meranti</i>, <i>Chengal</i>)</li> <li>• The whole door component made without a single nail which using a joinery system called <i>tanggam</i> putting and hole (tongue and groove).</li> </ul>

### Characteristics of the TMH (Negeri Sembilan and other regions)

Table 2.2: Basic characteristics of the NSTMH and TMH of other regions.  
(Source: Adapted from Yaakub, 1996)

Characteristics	Northern	Perak	East Coast	Pahang	Southern	
	Penang	Kedah			Negeri Sembilan	Melaka
<i>Long Roof</i>	/	/	/	/	/	/
<i>Bumbung Tingkat</i> (Layered Roof)	/	/	/	/	/	/
<i>Tiang Tinggi</i> (High Column)	/	/	/	/	/	/
<i>Tiang Tongkat</i>	-	-	-	/	-	-
<i>Lantai Tingkat</i> (Layered floor)	/	/	-	/	/	/
<i>Tunjuk Langit</i> (Kingpost)	/	/	/	/	/	/
<i>Tiang Empat Baris</i> (Four Column in Row)	/	/	/	/	/	/
<i>Serambi</i>	/	/	/*	/	/	/
<i>Anjung</i>	/	-	-	/	/	/
<i>Rumah Ibu</i>	/	/	/	/	/	/
<i>Rumah Dapur</i>	/	/	/	/	/	/
<i>Loteng</i> (Attic)	-	-	-	-	/	/
<i>Tiang Gantung</i> (Suspended column)					/	

Legend: (/): Yes; (-): No; (\*): partial



### 2.3.1 TMH as *Rumah Kampung*

According to the definition by the Local Government Department (LGD) under the Ministry of Urban Wellbeing, Housing and Local Government (KPKT), a traditional *kampung* is a village made up of dwellings, the existence and development of which was unplanned and took shape randomly. It also means a settlement that is passed down through generations and incorporates architectural features and the environment and concept of a Malay village.

There is also another category – structured settlements – which represents a village planned for a number of reasons, such as for the relocation of villagers, provision of land and natural disasters. The department also identifies four types of *kampung*: the traditional *kampung* (traditional village), *kampung nelayan* (fishermen's village), *kampung atas air* (water village) and *kampung orang asli* (aborigine village). Only the traditional *kampung* in Negeri Sembilan is covered here as it is more related to the specific characteristics of TMH.

A study conducted by the LGD between 2005 and 2009 identified a total of 14,003 *kampungs* which still exist in the local authority areas of Peninsular Malaysia. So, if it considered that each *kampung* consists at least 50 TMHs, then, this study acknowledges the potential of the valuable and extensive existence of the TMH.

According to Ingold (2000), the house is 'a product of the activities of its human builders'. The TMH is a product of this context, making it also known as the *rumah kampung* or '*kampung* house' (Lee, 2003). Historically, when the British decided to segregate the economic and settlement structures of the people in Malaya (now Malaysia) according to race, Malays were ordered to live in the rural areas (farming and fishing), Chinese in the city areas (business and financial) and Indians in the plantation areas. Although the migration of Malays into urban areas has been taking place since Independence in 1957, a large proportion remain in rural areas in their '*kampung*' or '*Malay Kampung*' settlements.

The term refers to the Malay vernacular architecture that can be seen in rural areas. The *rumah kampung* serves the housing needs of the majority of the Malay

people. This vernacular architecture is a distinctive characteristic that blends well with the *kampung*'s surrounding environment. According to the Oxford Dictionary, *kampung* also means a Malaysian enclosure or village. The *kampung* normally consists of the house and the house compound. The TMH has its own surrounding compound, which represents the boundary of its private space, while the *kampung* is a reflection of the public space of the larger territory beyond the traditional house (Lim, 1987).

The natural setting of the *kampung* also provides an informal environment that is both conducive and well suited to the social relations and cultural interactions of the villagers. Activities such as a children's playground, feasts and religious ceremonies are the main social interactions that take place in the compound area. The *kampung* can also be formed as a community space for the villagers. The setting of the house and its compound are usually well oriented and spaced far apart to allow for future expansion, tree-planting and privacy (Lim, 1987) (Figure 2.2).

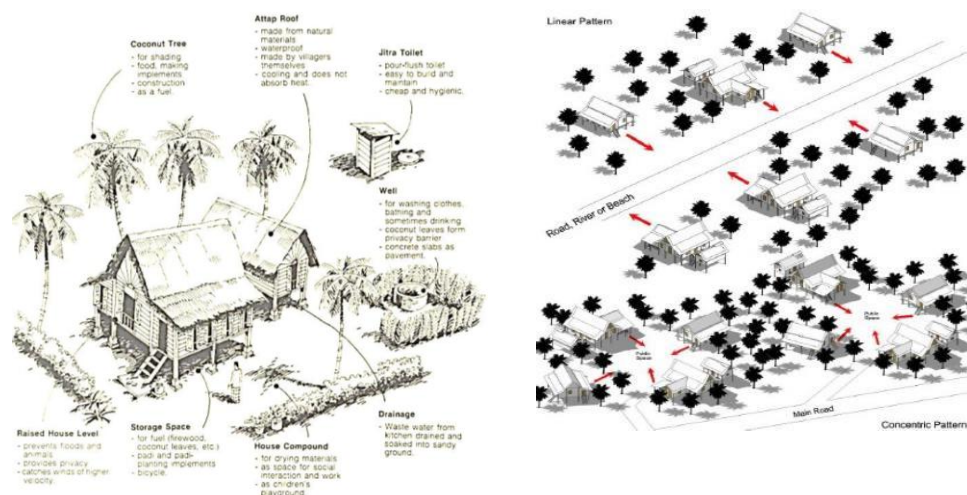


Figure 2.2: The *kampung* environment  
(Source: Lim, 1987 and Sahabuddin, 2012)

The traditional *kampung* in the research area is scattered and in a form of linear pattern. It is difficult to pinpoint the exact location of each NSTMH in a mapping system, despite the existence of an E-*kampung* mapping system of the Negeri Sembilan area. However, it only contains details of the facilities and type of land use

found there. TMH as part of the layout of two different *kampungs* in Negeri Sembilan were drawn as an example by a group of students in the reports shown in Figure 2.3.

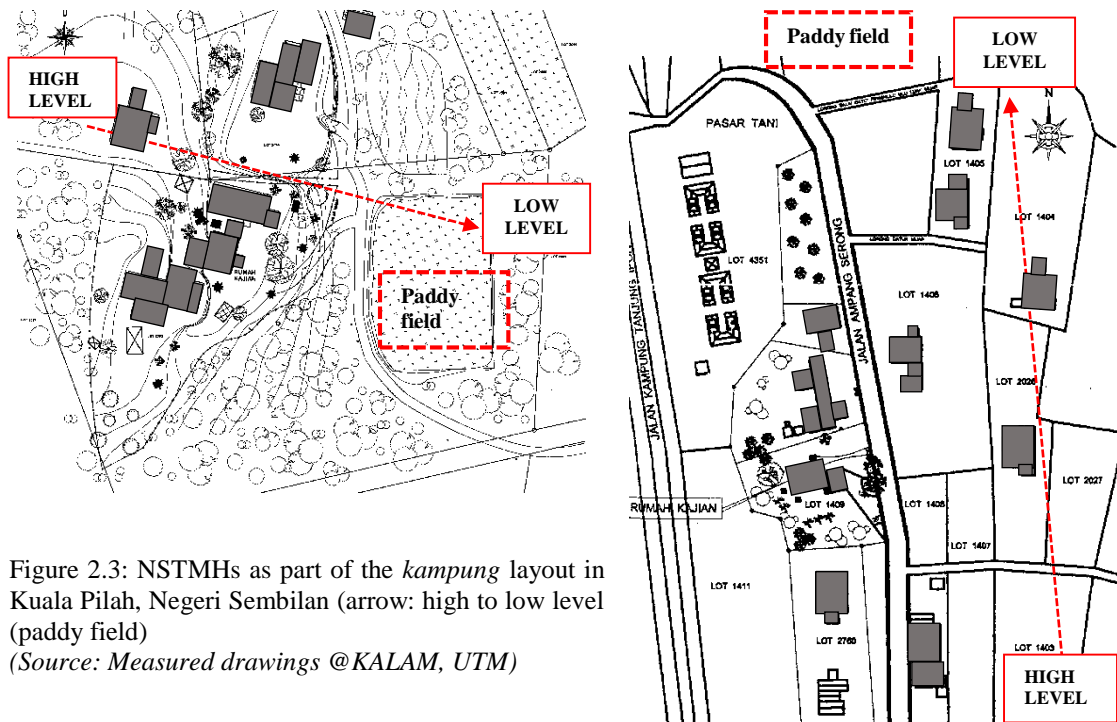


Figure 2.3: NSTMHs as part of the *kampung* layout in Kuala Pilah, Negeri Sembilan (arrow: high to low level (paddy field))  
(Source: Measured drawings @KALAM, UTM)

These illustrations demonstrate the importance of a concept of orientation etc. in the vernacular image and how this disperse at *kampung* setting. This is also stressed in a different context in Scotland as in the SHEP (2011):

The impact of vernacular buildings in particular is often made not only by individual buildings but by their grouping.

(Item 16 (c), SHEP (2011) p. 76)

### 2.3.2 Regional Variations

In Peninsular Malaysia, there are various distinct regional variations of the form of the TMH. According to Rasdi (2005), the distribution of the regional styles can be grouped into four styles: Perak style, Melaka style, Kedah style and East coast style (Figure 2.4). The NSTMH falls within the category of Melaka style, shown below in the red-lined circle. Each of these styles can be differentiated through their roof shape, form, layout plan and structure. A common characteristic shared by all of them is that they

are built on stilts, with an elevated floor and dominant use of a long roof type of house form, as supported by (Lim, 1987, Wan Ismail, 2005).

According to Rasdi (2005), Malay vernacular architecture has also been subjected to the influence of its outside regions and neighbours: Indonesian, Bugis, Riau and Java from the south; Siamese, British, Arab and Indian from the north; Portuguese, Dutch, Aceh and Minangkabau from the west; and Southern Chinese from the east.

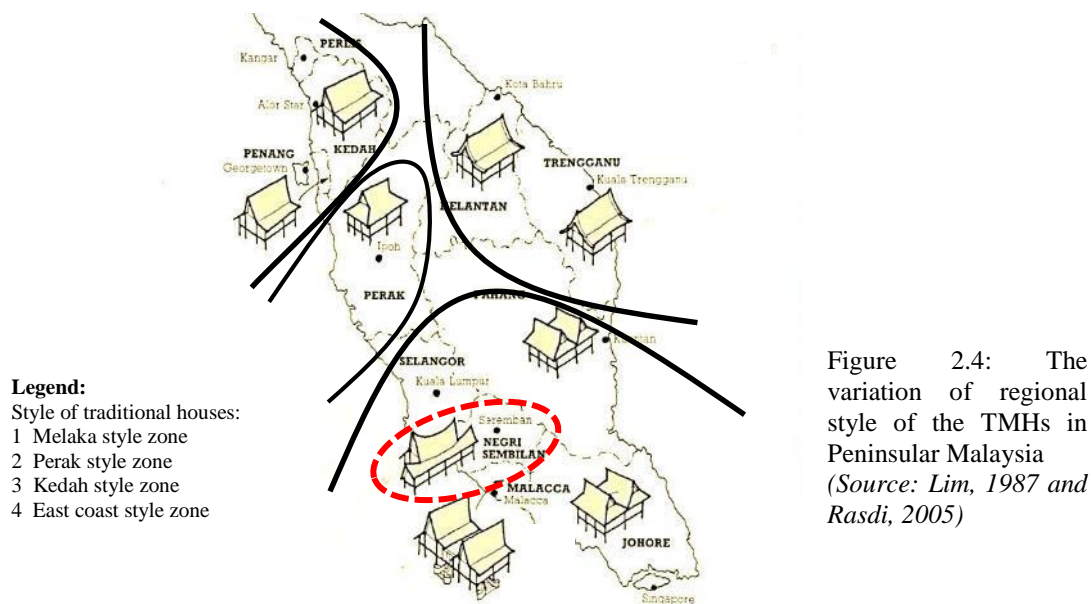


Figure 2.4: The variation of regional style of the TMHs in Peninsular Malaysia  
(Source: Lim, 1987 and Rasdi, 2005)

This importance of regional variation is also highlighted in a very different environment, as the SHEP (2011) mentions for Scotland:

The best examples of local vernacular buildings will normally be listed because together they illustrate the importance of distinctive local and regional traditions. It is important to ascertain distinctive regional variations in type, material and form.

(SHEP, (2011) Item 14, pg. 75)

### 2.3.3 Reflection of the Malay Way of Life

The TMH was designed to suit the lifestyle and economic status of its owners, who have a strong relationship with the building as it creates a sense of belonging and is sensitive to their own culture. According to Ingold (2000), the ‘dwelling perspective’,

such as the traditional house, represents the forms of life that people created depending on the activities in their lives. The design of this timber building was a reflection of the Malays' social way of life. Malays traditionally almost always perform the activities of sitting, sleeping, eating and praying on the floor.

The Malay practice is normally to sit cross-legged (Oliver, 1997). No shoes are allowed to be worn in the house, as this would bring bad omens to the owner, but is also to keep the house free of dirt. Malays take off their shoes prior to entering the house and wash their feet. All the internal floor areas are walked on barefoot, a practice that Malays also observe nowadays in modern houses. According to Oliver (1997), an important principle is to keep the house clean in order to achieve a multi-functionary use of the space within. Social customs of hospitality are also reflected in the design, layout and use of space within the TMH, especially regarding the seclusion of women (Hilton, 1956; Oliver, 2006). To be more specific, this aims, through a segregation of the private and public spaces in the house, to respect women based on the Islamic way of life.

Additionally, according to Noble (2007), a house not only reflects human intellect, but more so the elements that are associated with it, such as the materials of its built form and the location and orientation of the building, which also carries a mystical significance. Furthermore, the planning of a TMH incorporates with the Islamic way of life (GhaffarianHoseini and Dahlan, 2012; GhaffarianHoseini et al., 2009) and social significance, which has a greater symbolic value (Rapoport, 1969) compared to ordinary dwellings. Hilton (1992) claims that space was provided to allow prayers at home, which also relates to the orientation of the house facing Makkah (Idrus 1996; Lim 1987).

The TMH did not enter into existence through chance or by coincidence, and it was not developed with the sole intention of providing shelter; rather, its development is more reflective of the world-view and manifestation of the Malay people. Everything – each shape, each space and each angle of the structure – is planned and built in a tidy manner. Each element has its own role and functions.

The life history of a building, such as the vernacular building, also depends on the involvement of owners and their perceptions (Ingold, 2000). In Bourdieu's theory of practice, it is described as a pattern of thought-feeling by individuals, especially in their daily lives (Jenkins, 1992). The practical engagements between people and the TMHs are different, depending on their context (Ingold, 2000). For instance, the perception of engagement that appears most often in this vernacular building and is seen especially by looking at changes to the form of the house and the ways in which people have become involved and interacted with it, which in turn reflects the overall character of the house. Ingold (2000) also pointed out that, due to the house originally being built in a certain era, this provides concrete evidence that the house has undergone significant historical changes, especially in terms of its form.

Lawrence (1990) has identified why vernacular architecture takes a particular form, covering the aesthetic or formalist, the typological, the evolutionary, the social and geographical diffusion, the physical, social and the cultural forms. These aspects also relate to the TMH in term of specific typologies such as *Serambi*, *Rumah Ibu* and *Rumah Dapur* and also the curved roof with timber structures, which reflects their beliefs and suits the local context and environment. The connection between the built form and the environment sometimes poses different interpretations. People appear to judge important buildings of the past in a different way, but in order to understand them, their whole environment needs to be studied in relation to the history of its built form. According to Rapoport (1969), there are five important aspects of the *genre de vie* (kind of life) which affect the built form: some basic needs, family, the position of women, privacy and social intercourse.

The TMH is accordingly built around the lives of the people living in it with their families. This requires its partitioning into private and public spaces because of the importance of spaces for *Serambi*, *Rumah Ibu* and *Rumah Dapur*. Furthermore, the built form represents the physical embodiment of the patterns of the owners' behaviour and way of life (Rapoport, 1969). Most vernacular buildings, such as the TMH, are built by the owners themselves. The owners understand their own needs and requirements (Rapoport, 1969). There is a close relationship between inhabitants, the architecture form, the culture and maintenance, because they are connected to each

other. The owners are the architects of their own houses. This is also in line with Levi-Strauss's concept of 'house societies' that highlights a specific form of social organisation of the people who live inside and as a group, continually being assured of its existence and identity and which is related to kinship. In the Malay society, kinship is very important, as, in the *kampung* environment, it serves to demonstrate the spirit of togetherness, and a close and strong relationship between people.

The TMH can be seen from its various configurations that reflect the people living in it. It is also a place that evolves, can be modified, moved or abandoned altogether as a result of the changing circumstances of its inhabitants (Carsten and Hugh-Jones, 1995). The 'house' is not only a physical structure, it is also a reflection of the social relations of the people living in it, which are connected and enacted within it (Waterson, 1990; Carsten and Hugh-Jones, 1995). A lot of aspects have to be taken into consideration in the planning of this timber building. From the segregation of spaces according to age and gender and the preservation of privacy, to the zoning of the clean and unclean areas, all are fully identified, especially the respecting and seclusion of women in the Islamic communities (Oliver, 2006). Furthermore, according to Carsten and Hugh-Jones (1995), the house is an extension of a person who has a conscious connection between body and mind.

Figure 2.5 illustrates the orientation of a human's feet and head in the house at times of sleep, illness and death, according to Negeri Sembilan culture and the owners who build the structures themselves will automatically reflect their own interests, beliefs and needs. It has a sense of belonging for the owner and is a house that has been carried from generation to generation. This historical continuity of the house plays a role in determining its architectural form (Waterson, 1990) and the Malay culture is reflected through its spatial concept and structural system.

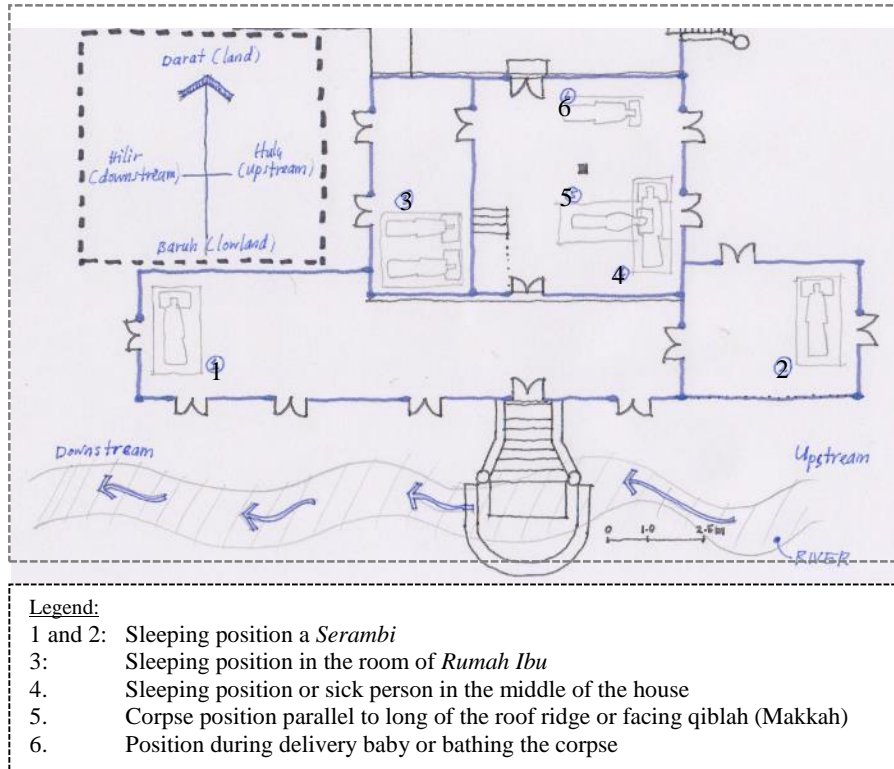


Figure 2.5: The orientation of humans in the house  
(Source: Idrus, 1996; Author, 2015)

### 2.3.4 Proportion and Scale

Generally, in terms of proportion and scale, the size of the TMH and the design for use of space within is in accordance with the physical dimensions (i.e. size) of the Malay people that occupy it (Figure 2.6). In the case of the NSTMH, the house will be built in respect of the dimensions of the first women, who are the owners according to the social system of *Adat Perpatih* (matrilineal). The construction of the house normally uses the human body as a Malay traditional measurement, such as *sekaki* (feet), *sedepa* (length of 2 arms outstretched), *sehasta* (length of the forearm), *jengkal* (length of the outstretched palm), etc. The status, roles, wealth and anthropometrics of the owners were expressed at the size of the house (Oliver, 1997).



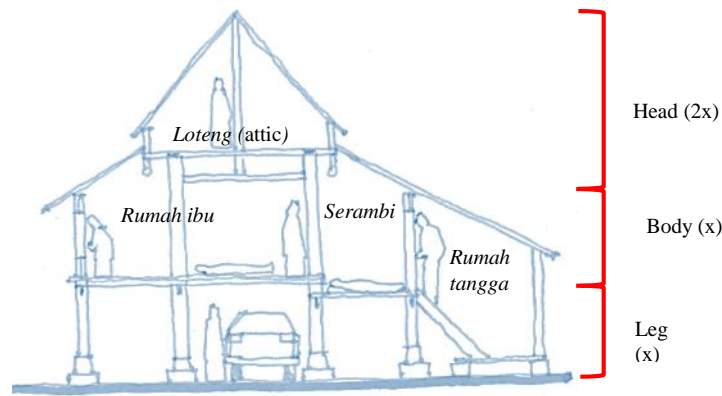


Figure 2.6: The size of the house and space use, according to the size of the Malays  
(Source: Adapted from Idrus, 1996)

Waterson (1990) was also impressed by the architectural forms in South East Asia, especially the construction skills and harmonious sense of scale and proportion. She noted that the TMH was erected in accordance with the principle of ‘one house, one tree’, meaning that all of the wooden posts used in the construction of the house must be extracted from a single tree trunk. Furthermore, the roof of the house is dominant, compared to the walls, usually the roof is twice that of the body and legs of the house (Figure 2.6).

The most obvious element in the NSTMH besides the curved roof is the main door entrance to the *Serambi* area from outside or from *Rumah Tangga*. The door is specifically designed to be lower than normal door height to ‘force’ the guest to bow or show respect to the owner when entering the house, similar to the Japanese custom of bowing when greeting people (Figure 2.6).

### 2.3.5 Local Materials

The architectural styles of the region are normally well adapted to local environments and the use of locally available materials (Waterson, 1990). Additionally the entire region of the traditional buildings of South East Asia tend to share special characteristic features, which use joining, pegging, wedging or binding, without the use of nails (Waterson, 1990). Pieces of timber are usually lashed together using strips of bamboo or *Nipah* (palm leaves), especially in roof constructions.

Palm-thatched roofs (*Nipah*) or *Nypa ruticans* were most widely used and would last for up to three years. The materials can be found in swampy coastal and riverine areas. Besides these, sago palm (*Rumbia*) or *Metoxylon saguor Metroxylon rumphii* leaves were preferred as they are more durable (lasting for two to three years) than *Nipah*. According to Killman et. al (1994),

‘The roof at the *Rumah Dapur* can last even longer, as the smoke from the open fire place serves as ‘fumigant’ against fungal and insect attack.’  
(p. 19)

Other leaves were also used for thatching (*Pinanga spp.*, *Eugeissona tristis*). All of these types of leaves serve not only to cool the building, they also act as good insulators. Although *Cocos nucifera* (coconut palm) is commonly found within the house compound (*kampung*), it does not provide adequate durability as it rots relatively quickly. The use of split bamboo with raised floors allows air to flow from below to cool the house, for flood protection and for defence against animals. Deep overhangs are a dominant characteristic of the NSTMH, and are used to provide protection against the sun and rain, allowing cross-ventilation during rain (Figure 2.8). The extended eaves of the roof of the NSTMH are cantilevered and provide with extra support by a free-standing post at both ends of the house.

As in *Rumah Dato Sidin*, woven bamboo was used at the gable end to allow light to enter into the original design of the house. This has now been routinely replaced with plain horizontal timber boards, layered with no decorative elements, due to frequent changes of materials and diminishing skills and materials. Rapoport (1969) also agreed that if woven bamboo is used as a wall, it is able to eliminate glare in a way that no window can.

According to Rapoport (1969), the availability and choice of materials and construction techniques will influence and even modify the form of the building. According to Said (2002), the selection of appropriate timber normally depends on its availability and physical characteristics and durability, and is also based on the craftsmen’s spiritual belief towards the species. *Chengal*, *Merbau*, *Damar Laut* and *Petaling* are among the local hardwoods seen most often in the construction of TMHs,

especially in the structures, while *Meranti*, a medium hardwood, is normally used for wall panels and flooring (Lim, 1987). Due to its durability and resistance to subterranean termites, *Meranti* is usually used to make architectural elements such as door leaves, ventilation panels and carved elements (Said, 2002). *Chengal* hardwood is found widely in Malaysia, including in the state Negeri Sembilan in Peninsular Malaysia, but not so much in the states of Melaka, Perlis and the south of Johore (Lim et al., 1998). According to Killman et al., (1994), the main enemy of timber in the region is termites and subterranean termites, the typical major pest for timber in the tropics.

*Chengal* is the main local hardwood found most frequently within the construction of the NSTMH (Figure 2.7). *Chengal* is also known as *Penak* (its vernacular name) or *Ponak* (the name given to it by local village people in Negeri Sembilan). The Standard Malaysian name for *Chengal* is *Neobalanocarpus heimii* (*Dipterocarpaceae*). *Chengal* has its own characteristics, such as its high strength (Strength group A) (Table 2.3) and heavy hardwood with an air-dry density of 915–980 kg/m<sup>3</sup>. It also very durable (Table 2.4), even under adverse conditions and does not require any form of preservation treatment. According to Table 4 in MS 544: Part 10:2003 (Department of Standards Malaysia, 2003), *Chengal* is also resistant to attack the powder post beetle, as shown in Table 2.5. The good thing is that this timber is suitable for all forms of heavy construction (Wong, 2008; Menon, 2004). Although some timber is durable and if they are not well maintained, it susceptible to decay (Ridout. 2000).

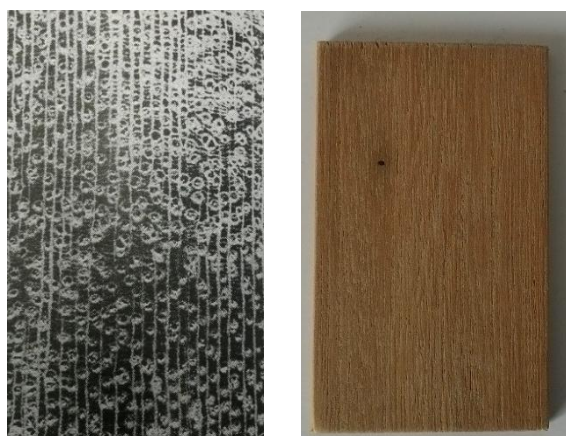


Figure 2.7: The cross section of *Chengal* wood (left) and the sample (right)  
(Source: Menon, 2004 and Awang et. al., 2011)

Table 2.3: Strength grouping of timber  
(Source: Adopted from Wong (2008), item iii, p. xiv)

Strength Grouping		Comprehensive Strength
Group A	Extremely Strong	Above 55.2 MPa
Group B	Very Strong	44.4-55.2 MPa
Group C	Strong	27.6-41.4 MPa
Group D	The Weakest	Less than 27.6 MPa

Table 2.4: Natural durability classification of Peninsular Malaysian timbers for ground contact.  
(Source: Adopted from Table 1a (MS 30:2006, p.3))

Class 1	Class 2	Class 3		Class 4	
Very durable (More than 10 years)	Durable (5 to 10 years)	Moderately durable (2 to 5 years)		Not durable (Less than 2 years)	
Chengal	Balau	Agoho <sup>2</sup>	Rengas	Api-api	Nyato
Giam	Bekak	Balau, red	Sepetir	Ara	Perapat
Penyau	Bitis	Bakau, red	Tumu	Berangan	Perah
Resak	Kasai	Bungor	Tualang	Balek angin	Perupok
Tempinis	Kapur	Derum	Telor buaya	Bintangor	Petai
	Nyato	Dedali	Pelong	Batai	Podo
	Merbau	Dedaru	Kerukup	Bayur	Pulai
	Mersawa	Delek	Brazil nut	Damar minyak	Putat
	Merbau lalat	Dungun	Keruntum	Dungun paya	Ramin
	Delinsem	Acacia	Keruing	Durian	Samak
	Malabera	Pauh kijang	Keledang	Engkabang	Sena
	Medang	Kapur	Mata ulat	Jelutong	Sawa luka
	Penaga	Kelat	Medang	Gaham badak	Sepul
	Pelajau	Kembang semangkok	Meranti, dark red	Geronggang	Sesenduk
	Pelawan	Kempas	Mempening	Gerutu	Sentang
	Ranggu	KerANJI	Mengkulang	Gading	Simpoh
	Surian batu	Gegatal	Meransi	Gapis	Sempilor
	Teak	Kulim	Merbatu	Meranti bakau	Terentang
	Tembusu	Kungkur	Merawan	Meranti, light red	Tapus
		Leban	Merbau kera	Jenitri	Terap
		Nyalas	Meranti, white	Jongkong	Tuai
		Pauh kijang	Mertas	Kasah	Tulang daing
		Petaling	Nyato	Kekabu	Ketapang
		Punah	Nireh	Kawang	Rubberwood
			Nipis kulit	Keledang	Pine
				Kapur	Yemane
				Kayu malam	Coconut
				Kedondong	Tengkuning
				Kungkur	Penarahan
				Meranti, yellow	Keruing
				Laran	Meranti tembaga
				Lelayang	Machang
				Lilin	Medang
				Limpaga	Mempisang
				Ludai	Merbatu
				Merpau	Melantai
					Minyak berok

Table 2.5: Susceptibility of some Malaysian hardwoods to powder post beetle attack.  
(Source: Adopted from Table 4 (MS 544: Part 10:2003, p.8))

Immune	Rarely susceptible	Moderately susceptible	Highly susceptible
Balau	Balau, Red	Durian	Jelutong
Bitis	Bintagor	Kedondong	Kempas
Chengal	Kapur	KerANJI	Melawis
Geronggang	Kasai	Kungkur	Meranti, yellow
Giam	Kelat	Machang	Merbau
Kulim	Keladang	Merawan	Penarahan
Medang	Keruing	Rengas	Ramin
Merawan	Melunak	Tualang	Sepetir
Meranti, light Red	Mempisang		
Meranti, dark Red	Mengkulang		
Meranti, white	Nyato		
Perupok	Punah		
Pulai	Resak		
Sesendok	Simpoh		
Tembusu	Terap		
Terentang			

### 2.3.6 Environmental Performance

The TMH is designed for and best adapted to Malaysia's warm and humid local climate. Every single aspect of the house is taken into consideration in order to provide comfort to the user, during both the day and night. This is evidenced by the use of readily available natural materials with low thermal conductivity (timber, palm leaves, bamboo, etc.) for a lightweight construction (Hilton, 1956), to the controlling of heat and humidity inside the house through cross-ventilation with full-height windows and an open interior space with minimal partitions. The large roof eaves allow shade from the sun, avoid glare and also protect against heavy rain (Hilton, 1956). These climatic aspects are appropriate for a healthy environment and, more importantly, are easily maintained (Figures 2.8 and 2.9).

Figure 2.8 shows that the traditional house is well designed with great understanding and blends well with the nature of the tropical climate in Malaysia. The most obvious consideration in the house is its provision of adequate natural ventilation for cooling and the reduction of humidity. It can be said that almost 100% of the building materials used derive from natural resources, which are lightweight in construction and have low thermal capacity, such as timber.

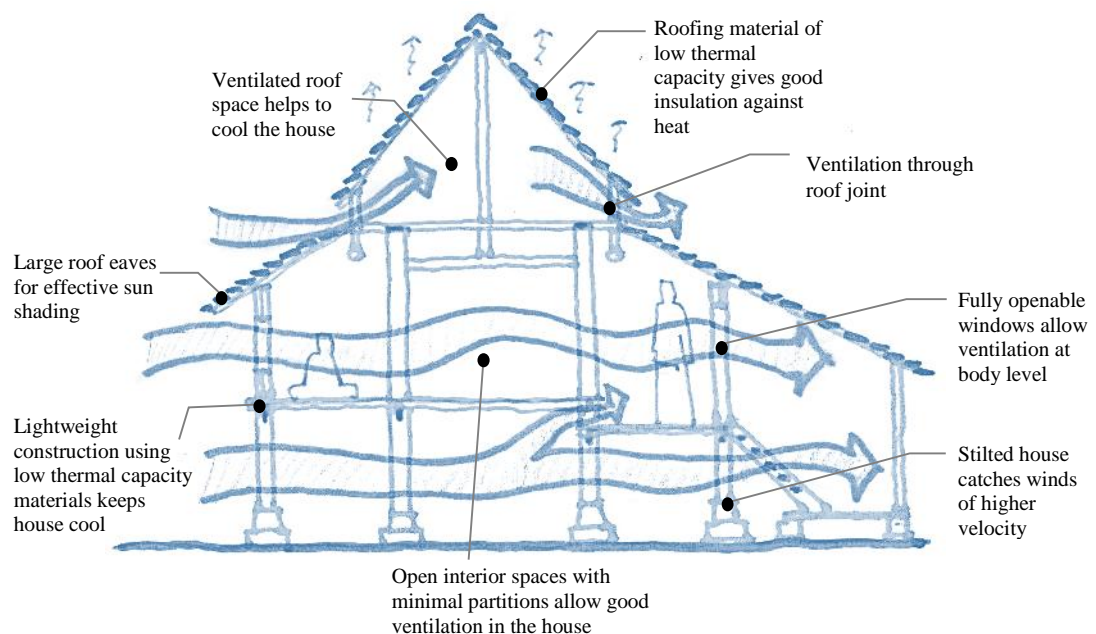


Figure 2.8: The climatic design of the TMH  
(Source: Adopted from Lim, 1987)

As claimed by Lim (1987), the TMH is more suited to its environment than a more modern house style as it maximises natural ventilation and this in turn serves to reduce energy use. Owners of modern houses tend to make extensive use of air-conditioning systems to cool the buildings (active design approach), with high indoor temperatures often a product of the design of the building itself - Sahabuddin (2015) showed that energy consumption is 66% greater than in a house that has a naturally ventilated house. Furthermore, he also demonstrated that the elements and characteristics of the TMH, especially its large opening areas on the element walls and large roofs, allow for the effective circulation of air, helping to cool the house in comparison to social housing buildings that do not feature such a system of natural ventilation (passive design approach).

As further claimed by Lim (1987), this design-with-nature approach that is a fundamental characteristic of the TMH provides the most effective and appropriate means of respecting Malaysia's tropical environment and climate (Figure 2.9). Although the traditional house potentially provides a solution for a sustainable design, it also has to consider the issue of limitation of land (Lim, 2012).



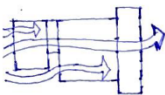
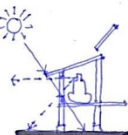
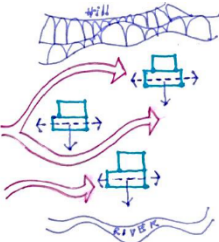


	<b>Building Materials</b> <ul style="list-style-type: none"> <li>• Use lightweight construction of wood, other natural materials</li> <li>• Low thermal capacity-holds little heat and cools adequately at night</li> <li>• The thatch roof (as an excellent thermal insulator)</li> <li>• Glazed area are seldom found.</li> </ul>	<b>Overhang and Exposed Vertical Areas</b>  <ul style="list-style-type: none"> <li>• Large overhangs</li> <li>• Low exposed vertical areas (windows and walls)</li> <li>• Provide protection against driving rain</li> <li>• Provide good shading</li> <li>• Allow the windows to be left open most of the time – ventilation.</li> </ul>
	<b>Cross Ventilation</b> <ul style="list-style-type: none"> <li>• The elongated open plans allow easy passage of air and good cross ventilation</li> <li>• Minimal interior partitions, less restrict air movement in the house.</li> </ul>	<b>Glare</b>  <ul style="list-style-type: none"> <li>• Control by large roof overhangs and low windows (exclude open skies from the visual field)</li> <li>• Lessened by the less reflective natural ground covers and wooden walls of neighbouring houses.</li> </ul>
	<b>Layout</b> <ul style="list-style-type: none"> <li>• Randomly arranged</li> <li>• To ensure wind velocity in the house in the latter path of the wind will not be substantially reduced.</li> </ul>	<b>Ventilation of Roof Space</b>  <ul style="list-style-type: none"> <li>• Roof spaces are properly ventilated by the provision of ventilation joints and panel in the roof construction.</li> </ul>
	<b>Orientation</b> <ul style="list-style-type: none"> <li>• To face Makkah (religious reasons), paddy field/river</li> <li>• East-West orientation minimises areas exposed to solar radiation.</li> </ul>	<b>Vegetation</b>  <ul style="list-style-type: none"> <li>• The use of coconut trees and, not only provides good shade but does not block the passage of winds at the house level.</li> </ul>

Figure 2.9: Aspects of the quality and environmental performance of a TMH  
(Source: Adopted from Lim, 1987)

Challenges arise when modern materials are used such as zinc and metal decking in place of original materials. This can create uncomfortable conditions inside the house on a hot day. Some house owners have added ceilings to reduce the absorption of heat (Figure 2.10). Further discussion on this in Chapter 5, 6 and 8.



Figure 2.10: The use of an added ceiling (*Rumah Pusaka Puan Hasnah Hassan-left*) and *Rumah Norfisah Hassan-right*) to reduce heat from the zinc roof when used as a modern replacement material. (Source: Author, 2014)

### 2.3.7 Prefabricated Addition System

The TMH has evolved through many generations of Malay society, since very early times, through the process of transformation. The house offers design flexibility through its addition system. This system of adding prefabricated parts as extensions to the core house can be tailored according to the varying needs of each family. This is due in large part to use of the '*tanggam*' system which enables timber beams and posts to be fitted into one another. All aspects of the extension, such as its design, construction and aesthetics, are well integrated into the *Rumah Ibu* (core house) and can be planned in advance with minimal disruption caused to the original fabric of the house.

The possibilities for extension depend on the needs of the user, and vary in their size and quality (Lim, 1987). A range of addition possibilities is found in Peninsular Malaysia, such as the *Serambi* addition, *Selang* addition, *Gajah Menyusu* addition, Courtyard addition, *Minangkabau* addition and the *Anjung* addition (Figure 2.11). Some house owners may choose to incorporate a combination of the various



addition possibilities. These types of addition are essentially applicable to the long gable roof house forms.

There are challenges when an extension disturbs the original form, fabric and function of the TMHs. For instance, the changes are quite radical when renovation took place especially in *Rumah Dapur* (Kitchen area) where the original function was still there but with the additional space such as bathroom, bedrooms, and the living room was introduced in this area. It sometimes denied the existence of some of those places in their original setting as in *Serambi* and *Rumah Ibu* area that seldom be used anymore. Although all of the possibilities for addition are well developed, house owners may end up undertaking the approaches in ways that are unsympathetic to the original buildings. Hilton (1956) also pointed out that additional factors that may affect the design and construction of the TMH are when the owner has few material resource at his disposal and is unable to acquire anything different. Hilton also claims that the TMH was not only designed to allow for the addition of extra rooms, but may even be dismantled and re-erected elsewhere. According to Hilton (1992), wealthy owners' houses are never moved from place to place, and this should be a point to verify during this research.

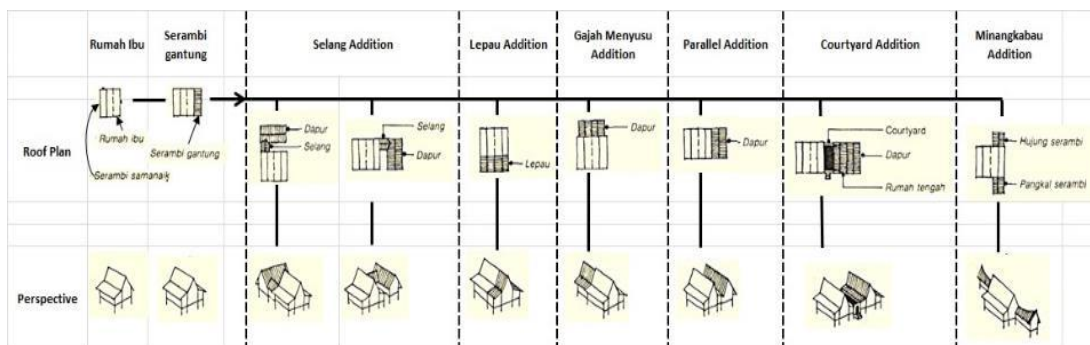


Figure 2.11: A Prefabricated Addition System (Extension).  
(Source: Adopted from Lim, 1987)

Normally, the basic core house (*Rumah Ibu*) consists of six columns (*rumah tiang enam*) (indicating the size of the house) which can then be expanded to comprise 9, 12, 16 or 20 columns depending on the status of the owner as well as the type of wall construction (internal or external columns). Internal columns are usually carved or moulded (Killman et al., 1994) in addition to the external front columns of the *Rumah Tukang Kahar*. The floor joists (*rasuk pendek*) placed on binders (*rasuk*



*panjang*) and the tie-beams (*alang pendek*) which support the roof construction are the important elements that ensure stability of the TMH.

According to Killman et al. (1994), the distance between each column is between 1.2 and 4 metres and is limited by the deflection of the supported beams which guided by an old reference book of *Tajul Muluk* in erecting the house (a collection of belief and practice). The culture of these people including the experience and the status of the *Tukang* (Section 2.3.9), as well as the importance of individual elements for their beliefs and lifestyle. This beliefs and practice is part of the culture where the *Tukang* from, how they quantified and understand all these things.

According to Idrus (1996), there are three main methods of construction for erecting a TMH: the column and floor structure system, the roofing system and the wall system (including doors and windows). The column is the most important timber structure for the TMH. ‘*Sepenagak*’ is the erection process of the basic framework of the house until the framework is firmed and steady (excluding the floor, wall and roof). The traditional way of erecting a TMH is outlined in Figure 2.12.

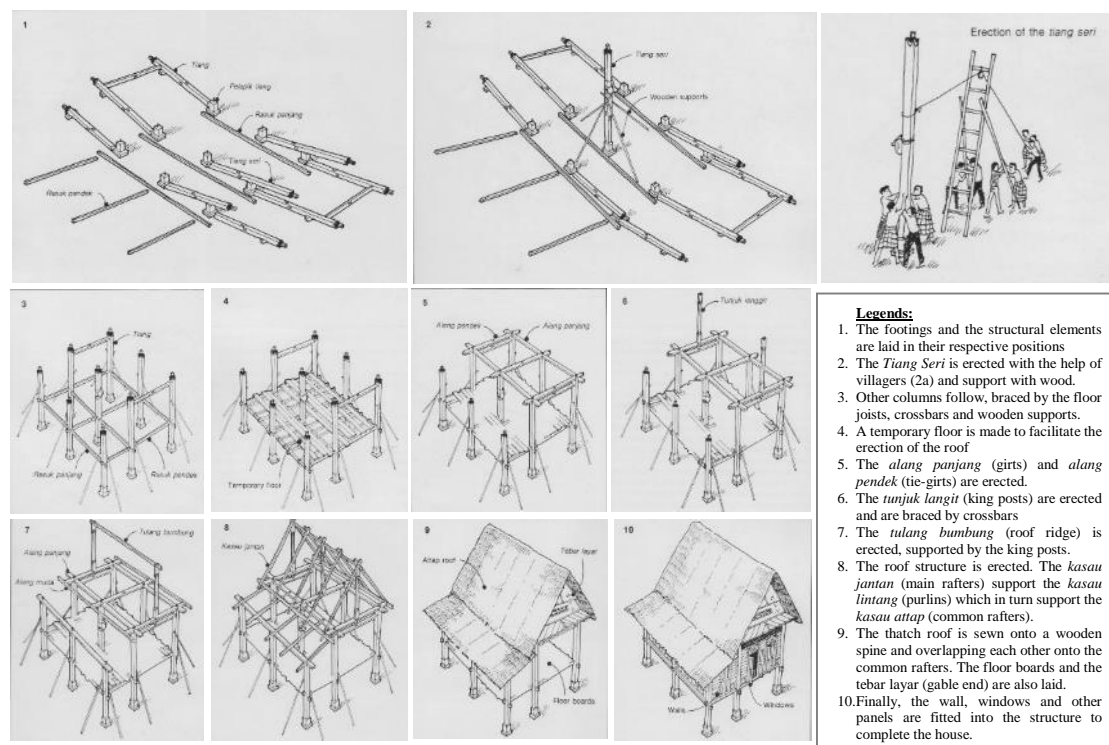


Figure 2.12: Example of the traditional method of erecting a TMH.  
(Source: Adopted from Lim, 1987)

The erection of a NSTMH does not take place purely by chance, or arise solely out of the need for shelter. It is well integrated; every form, every space, every function and every structural element is carefully planned and built. All of them are meaningful, functional and useful. Besides, the house constitutes a great expression of the Malay family and reflects the concept and philosophy of the Malay race.

### **2.3.8 Tiang Seri**

*Tiang Seri* or *Tiang Tengah* (Negeri Sembilan and Melaka) is the main column/pillar of the house and is the first to be erected, followed by the others. It forms the main support of the house to which the rest of the surrounding frame is tied. The *Tiang Seri* is also believed to be the dwelling of the spirit of the house and is where the family will tie together and hang all of their amulets and traditional weapons (Idrus, 1996). It is the most individual of all the pillars that make up the house and is recognisable through the addition of beautiful ornamentation, either on top, at the bottom or all over the entire column.

The *Tiang Seri* comprises the trunk of a tree and is situated in the centre of the *Rumah Ibu*. According to Killman et al. (1994), a coin is placed either in the hole into which the *Tiang Seri* will be inserted or into a hole dug into the bottom part of the *Tiang Seri* itself. This is carried out to ensure the wealth of the owner. In the case of the NSTMH, however, this practice is undertaken for another reason. The coin is important because it is a ‘time capsule’ to the house and will determine the ‘date of birth’ of the house. Normally, the coin will be hidden, together with silver or golden paper, inside a hole roughly one inch in depth before the hole is plugged with a dowel (Figure 5.35).

### **2.3.9 Tukang**

The TMH and the *Tukang* (craftsman) share a form of symbiotic relationship. The beauty of the house is a representation of the unique touch added by the great workmanship of the *Tukang* himself. The *Tukang* are able to conserve their materials, as they are capable and knowledgeable about the behaviour and characteristics of

materials, especially in terms of material weathering as a building fabric (Rapoport, 1969). Like a carpenter, a *Tukang* is knowledgeable about materials, especially timber, their properties, strengths and weakness, the type and their potential and constraints, and is also skilled in construction techniques (e.g. joinery and structural systems, etc.) (Razak, 1999).

Being a Malay master builder, the *Tukang* should also have another three attributes, like the famous *Tukang Kahar*, including being a *pawang* (knowledge of the rites and rituals of the construction process), a *ketua adat* (knowledge of the customs and practices pertaining to building traditions) and a carver (knowledge of aesthetics and a sense of perfection) (Razak, 1999). In the past, it was common practice within the Malay community for houses to be built by their owners functioning as the *Tukang*, as a means of reducing the cost of construction. Carpentry skills are also important if owners wish to carry out necessary repairs to their houses when required.

If the TMH is compared to other types of houses built on stilts in other parts of the world, such as in a very different environment as in Australia like houses in Brisbane and Darwin, for example, the differences between them can be seen in the detail and skilful techniques of the *Tukang* of the TMH. The research should look whether *Tukang* are available nowadays.

## **2.4 Negeri Sembilan**

Geographically, Negeri Sembilan lies on the western coast of Peninsular Malaysia and covers an area of 2566 square miles. It is surrounded by four states: Selangor (northwest), Pahang (north and northeast), Johor (southeast) and Melaka (south) at the edge of the Straits of Melaka (Figure 2.13). The topography of Negeri Sembilan is very different from that of other states. It is divided by the southern end of the Titiwangsa Mountains (*Banjaran Titiwangsa*).

Unlike other states, Negeri Sembilan has a unique cultural heritage that preserves and practises a matrilineal system of inheritance and administration of *Adat*

*Perpatih*. In addition to this, the unique architecture of the TMH, with its curved roof at both ends, is easily recognisable when entering the state.

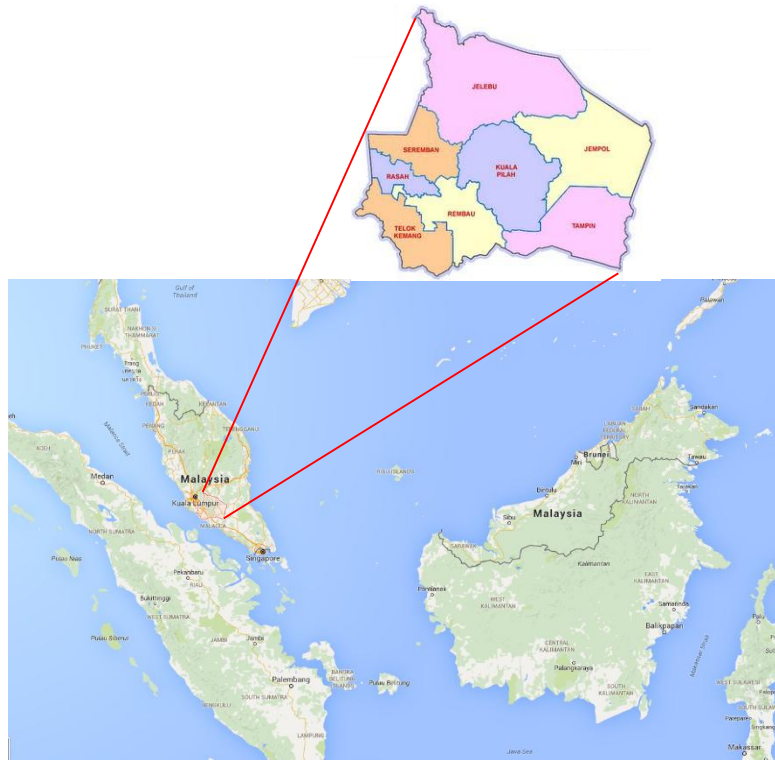


Figure 2.13: The geographical location of Negeri Sembilan, Malaysia.

Source: Adapted from <https://www.google.com/maps/place/Negeri+Sembilan,+Malaysia> [Accessed 21 April 2016]

#### 2.4.1 The Context of the Negeri Sembilan Traditional Malay House (NSTMH)

The NSTMH (Melaka style) was chosen for this research due the unique character of the building and the important sitings of old traditional houses (Rasdi, 2005) influenced by the social system, and also due to the number of derelict houses that can be found in the area. This angle links to the ICOMOS Built Vernacular Heritage (1999), which states that vernacular buildings should be best conserved, region by region. This type of building can be recognised through its characteristic roof form of a long roof with slight upward curves (*lentik*) at both gable ends, the profile of which resembles a boat (Idrus, 1996; Lee, 2003) (Figure 2.14) and a set of sacred water buffalo horns, such as is seen in the Minangkabau house, West Sumatera (Oliver, 2006; Waterson, 1990).

This type of architecture exerts a strong influence on a society that practices *Adat Perpatih*, a social system which is strongly matriarchal in its characteristics: the transmission of title and statuses of the ancestral home and land are through the female line (Kassim, 2007). Despite a slight physical similarity to the Minangkabau architecture, the design of the NSTMH is very much influenced by the culture of the local community. The unique characteristics of the house provide a rich variation in building style and, also, an excellent showcase of the skills and knowledge of the ordinary local villagers.

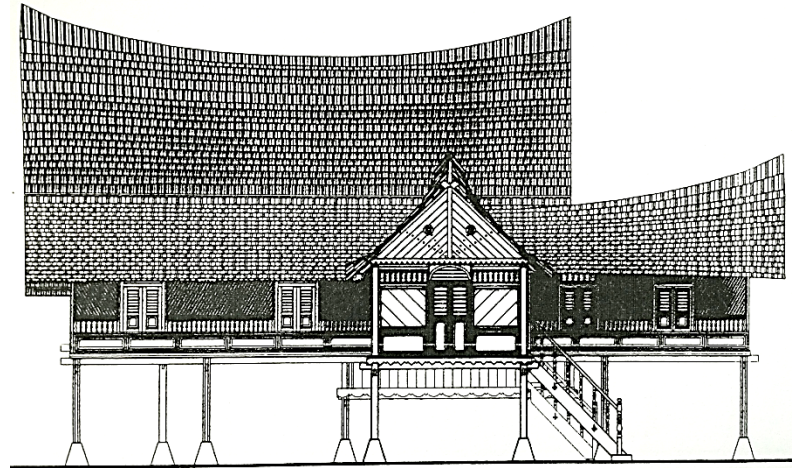


Figure 2.14: Example of an NSTMH (*Rumah Hajah Norfisah*) in Kuala Pilah, Negeri Sembilan  
(Source: Measured drawings @KALAM, UTM)

As was seen in the Table 2.1, a typical of the NSTMH can be characterised by the following elements:

- Main typologies: *Serambi* (*Serambi Pangkal*, *Serambi Tengah*, *Serambi Hujung*), *Rumah Ibu* (with *Loteng*-Attic) and *Rumah Dapur*.
- Good-quality *Chengal* (*Penak*) timber and other local materials (palm leaves)
- Expression of local, regional and traditional character that is responsive to the environment, especially its curved roof at both ends that acts as a style for Negeri Sembilan regional identity.
- The traditional expertise of a *Tukang*. This type of house is the work of a skilled individual.
- An effective response to the social system (*Adat Perpatih*), the religious system and very specific environmental constraints (hot and wet tropical climate).

- Effective application of traditional methods of construction (*tanggam* system and built without nails) and the sophisticated system of prefabricated extension (addition).
- Incorporation of a ‘time capsule’ (coin) as evidence of the birth date of the house, and concealed under the *Tiang Seri* (main central column).
- Two specific shapes of the column; *tiang pecah lapan* (octagon shape) or *tiang pecah empat* (square shape). The decorative column and *tiang pecah lapan* represent the high status of the owners.

The NSTMH can be classified into three types: the *Rumah Tiang Dua Puluh* (20 columns), *Rumah Tiang Enam Belas* (16 columns) and *Rumah Tiang Dua Belas* (12 columns) (Figure 2.15), the latter being the most common type (Idrus, 1996). People usually live in the *Rumah Tiang* with 4, 6, 9 or 12 columns, according to the status of the owner and whether they are wealthy or have a privileged position or status in society.

A further study carried out by Idrus (1996) shows the variation of the curved roof and the four types of *Serambi*: *Serambi* without *Anjung*, *Serambi Pangkal*, *Serambi Pangkal* and *Serambi Hujung*, and *Serambi* with *Anjung* (including *Pangkal* and *Hujung*). The type most commonly seen is the *Serambi Pangkal*, while the *Serambi* with *Anjung* is the least common, belonging as it does to the wealthy and people in a high position. The NSTMH should also be on stilts, with a floor raised from the ground and have timber stairs, and the back of the house (*Rumah Dapur*) should link to the *Rumah Ibu* (Idrus, 1996).

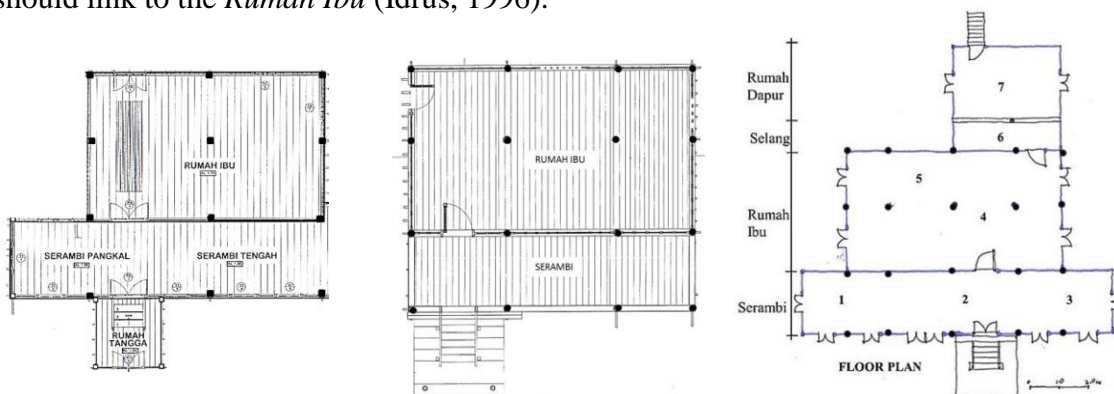


Figure 2.15: Examples of the three types of NSTMH: *Rumah Tiang Dua Belas* (with 12 columns) (left), *Rumah Tiang Enam Belas* (with 16 columns) (centre) and *Rumah Tiang Dua Puluh* (with 20 columns) (right)

(Source: Measured drawings @KALAM, UTM and Author (2014))

The NSTMH normally comprises either the main house, middle house and kitchen, or only one building unit consisting of the main house. The structure of the floor and the pillars in the long-roofed houses differs from the long-roofed houses in Kelantan, Terengganu, Perak, Selangor and Pahang (Figure 2.4). Moreover, the short beam, in addition to the crossbeam, lies above the long beam, meaning that the row of joists lies above rows of long beams (Idrus, 1996).

According to Idrus (1996), it is prohibited for members of the public to copy any part of a house belonging to a person of high status, which includes the following specific activities:

- a) Copying the type of threshold (*bendul mancung*); it must be *bendul silang*.
- b) Having two *Anjung*; there can only be one *Anjung* applied at *Pangkal Serambi*.
- c) Creating any embellishment or carving of the timber post of the stair house, especially in the area of Seri Menanti, Kuala Pilah.
- d) The *Anjung* post should comprise four columns and cannot be of two columns, only as *Rumah Melaka*.
- e) Suspended columns are forbidden.
- f) *Tebar layar* cannot be more than two storeys.

According to Nasir (2011), the NSTMH long roof has been well preserved all over the state. This need to be surveyed and verified with owners, whether roofs are easy to maintain. A June 2015 news article entitled '*Rumah Tradisional Negeri Sembilan*', or Negeri Sembilan Traditional House online, featured the experiences of owners who continue to live in NSTMHs and who appreciate their significance. These people are very passionate about maintaining the houses for future generations. The same article also highlighted some misconceptions with regards to the NSTMH. Figure 2.16 and Table 2.6 explain the differences between a typical NSTMH and a Minangkabau house (Indonesia).

Some people may have a misunderstanding about the type of timber used in the NSTMH, referring to it as ‘*jati*’ as given in the tourism webpage (<http://www.tourism.gov.my/ms-my/my/about-malaysia/culture-n-heritage/architecture>) [Accessed 4 February 2016]. No ‘*jati*’ timber is used in any type of NSTMH construction, only *Chengal* timber. This misinterpretation of meaning is also part of the challenges that should be avoided not for the benefit of foreign tourists only but also by locals and scholars.

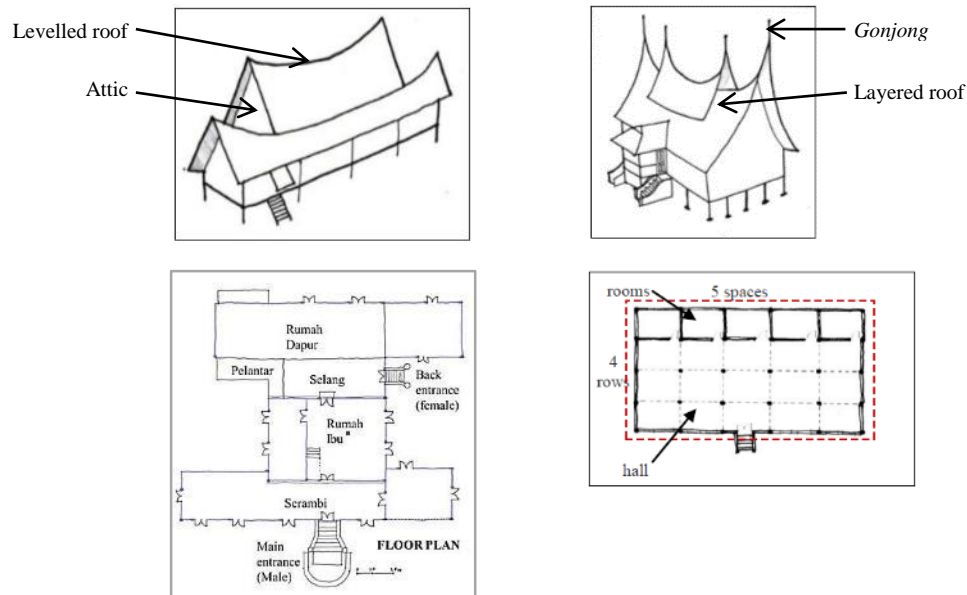


Figure 2.16: The differences between a typical NSTMH, Malaysia (left) and a Minangkabau traditional house in West Sumatra (right)  
(Sources: Author (2014) and Masri, 2012)

The summary of differences between an NSTMH and Minangkabau house as in Table 2.6 below.



Table 2.6: The different elements between the NSTMH (Malaysia) and Minangkabau house (Indonesia)  
(Sources: Adopted from Idrus, 1996)

Elements	NSTMH	Minangkabau house
<b>Roof</b>	Levelled roof (slightly curved at both ends) Two or more roofs <i>Rumbia</i> and <i>Nipah</i> roof	<i>Gonjong</i> (Curved) One roof only <i>Ijuk</i> roof
<b>Layout</b>	Long <i>Serambi</i> area One room and multipurpose space in <i>Rumah Ibu</i> <i>Rumah Dapur</i> <i>Anjung</i> at <i>Serambi</i>	No <i>Serambi</i> Many room in <i>Rumah Ibu</i> No particular <i>Rumah Dapur</i> <i>Anjung</i> at <i>Rumah Ibu</i>
<b>Construction system</b>	Straight column 90° Roof frame with kingposts	Slanting or lean out column Frame from ground floor
<b>Wall</b>	Wood –overall	Wood- front, sides-woven bamboo
<b>Floor</b>	Levelled (hierarchy)	Flat except <i>Anjung</i>
<b>Door</b>	Front, Side and rear	Front only
<b>Window</b>	Many at <i>Serambi</i> area and both sides of the house	Many at front and the rest is none

## 2.5 Challenges in the Conservation of the Vernacular Architecture of the NSTMH

### 2.5.1 Defining Conservation

There are various interpretations of ‘conservation’ that have been used widely in the building conservation field, often according to the particular local needs and understanding of a country. According to the Burra Charter (2013),

‘Conservation is an integral part of the management of places of cultural significance and is an ongoing responsibility.’  
(p. 1)

The National Heritage Act (2005) provides the following description:

‘Conservation includes preservation, restoration, reconstruction, rehabilitation and adaptation or any combination.’  
(p. 99)

Conservation covers a wider range of concepts and actions (Watson, 2013). Conservation covers all the approaches and processes needed to retain the cultural significance of a historical asset. It includes maintenance, preservation, restoration,

reconstruction, rehabilitation, adaptation or any combination of these, and also the management of change.

### **2.5.2 Why Do We Need to Conserve the NSTMH?**

According to the ICOMOS Charter on the Built Vernacular Heritage (1999),

‘It would be unworthy of the heritage of man if care were not taken to conserve these traditional harmonies which constitute the core of man’s own existence.’ (p. 27)

and the Burra Charter (2013):

‘Places of cultural significance must be conserved for present and future generations in accordance with the principle of inter-generational equity.’ (p. 1)

These issues are of global relevance, as vernacular structures all around the world are facing serious problems of dilapidation and are extremely vulnerable (ICOMOS Built Vernacular Heritage, 1999). Furthermore,

It reflects the places of cultural significance that provides sense of connection from the past that shows an evidence of important historical records of the diversity of community, identity, experience, which are irreplaceable and precious.

(Burra Charter, 2013, p. 1)

According to Sheppard (1969), the form of the NSTMH is undergoing rapid change as many of the traditional features have been influenced by Western and modern social practice. Sheppard adds that if the Malay house form changing rapidly, it will soon become very difficult to define between the original and contemporary form, particularly in the case of the old style that has started to disappear and may become a rarity.

The abandonment and redundancy of vernacular architecture in many places derives from many aspects and challenges, especially in the modern world. As highlighted by Vellinga (2014), the differences between cultures and times that have

led to different forms of architecture are rooted in places, communities and their traditions. These architectural forms are beginning to disappear under the inexorable advance of modernisation. In addition, vernacular traditions rely mostly on how people understand their value, and these are frequently abandoned and replaced with more modern approaches, thus highlighting some important lessons to be learned, especially with regard to sustainability. Whether specific traditions are continued or abandoned is influenced by a variety of cultural and practical factors, and also involves both the choices taken by local people and their environmental contexts (Foruzanmehr & Vellinga, 2011).

Alsayyad and Arboleda (2011) highlighted that abandonment is also related to the technical aspect of a building, whereby the owner simply cannot afford to apply or adapt the traditional building techniques developed by communities in the past, or the sophisticated craftsmanship and constant repairs and maintenance. As a result of this, most owners come to increasingly undertake work individually and are no longer community-based, which makes the indigenous vernacular building unaffordable to its originators. In addition, Vellinga (2007) asserted that this traditional community effort was formerly carried out as part of specific rituals and social festivities, while today the spirit of togetherness is hardly seen as it is no longer deemed necessary when a new house is constructed or an old one replaced by contractors, etc. The traditional one was 'the social focus of the family, the place where life unfolded, and most social interaction took place' (Vellinga, 2007, p. 121). Today, what is left behind is only a 'symbol' of the past which sometimes barely recognizable. This view calls into question the widely acknowledged notion in architectural theory that vernacular architecture is socio-economically sustainable (Alsayyad & Arboleda, 2011).

Furthermore, Vellinga (2007) asserted that 'many unique vernacular traditions have undoubtedly disappeared throughout history and, sadly, too many are currently under threat or undergoing a similar fate' (p. 118). It is quite common to see true vernacular architecture that has been passed down through generations together with local cultural and technical know-how.

It is important to conserve the NSTMH due to the many challenges that it faces, such as abandonment and loss of its characteristic form resulting from changes and

development. The current state of the NSTMHs is a reflection of their owners' knowledge, awareness and appreciation. Some owners no longer live in the houses, some have modified or altered them with scant regard for their heritage qualities. Others simply do not understand how to work with and maintain the structures, whilst other owners are not prepared to or are unable to take the initiative to do anything with their houses.

## **2.6 The Importance of the Vernacular Architecture of the Traditional Malay House (NSTMH)**

The importance of NSTMH in the modern day is relevant if it can be appreciated, understood, appreciated, learned from and adapted sustainably. Otherwise, according to Lim (1987), the TMH has lost its existence, due to the over-glorified modern house form. For instance, the adaptation of a 'new style' with new material was unsympathetically made which abandon their traditional house values as a source of inspiration (Lim, 1987). This process of change has also led to the disappearance and endurance of such traditions (Asquith and Vellinga, 2006). The further investigation needs to be explored in the context of NSTMH although it was considered outdated, and it continues to survive within a modern-day living, due to the changes and the efforts made to ensure its survival.

There remains insufficient support from professionals and policy makers alike, even though the qualities of vernacular buildings are culturally and environmentally friendly (Asquith and Vellinga, 2006). The attitude towards vernacular architecture, as noted by (Oliver, 2006), is short-sighted and it is essential that vernacular building traditions is supported by professionals (Asquith and Vellinga, 2006). Further investigation with the experts will be carried out in this research.

According to Wan Ismail and Shamsuddin (2005), there is no funding for the maintenance of privately owned old properties, which remain the responsibility of their owners. Many old TMHs have become derelict and are left in a dilapidated state due to a lack of funds. Although the Melaka state government has allocated some preservation funding (Preservation and Conservation of Cultural Heritage Enactment,

1988) particularly for heritage monuments, these funds are still not enough to cover all aspects, including the TMH. The same funds not only cover the traditional house, but also cater for other types, such as mosques and other monuments. Further investigation need to be explored on how PERZIM dealt with this issue.

This is because the state government does not have sufficient funds to make provision for the preservation of old buildings (Wan Ismail and Shamsuddin, 2005). Some efforts have been made to urge the owners to play their respective roles in conserving their buildings, as part of the architectural heritage of the state, especially in the case of old shophouses in the town area (Wan Ismail and Shamsuddin, 2005), but not the traditional houses.

The fact is that the TMHs are privately owned properties. There is a good example of a conflict of interest when looking to buy a house from the owner. Both parties have an interest in buying old buildings for showcase purposes, but in different locations and with differing agendas. Eventually, for certain reasons, the *Rumah Tukang Kahar* was sold to the NSM and were reassembled near Istana Lama Seri Menanti (Old timber palace), Kuala Pilah, as part of an exhibition to highlight the architectural heritage values of the *Tukang Kahar* craftsmanship.

Local people tend to sell their houses owing to a lack of funds for maintenance and the burdens placed on them by not being able to afford the costs of upkeep. As with everywhere unfortunately, arguments between siblings over ownership are common if late parents do not specify their wishes for inheritance of the houses, which is another reason why houses are left in a dilapidated state. There are many aspects involved in the importance of the NSTMH vernacular architecture, especially in terms of how the house owners deals with their house, their engagement (understanding, knowledge, appreciation and responsibility) towards protecting and conserving it.

Furthermore, Vellinga (2007) also suggested to ‘broaden the scope of vernacular architecture by looking at present-day as well as historical examples of change, adaptation and amalgamation (old and new)’ (p.126). This requires further investigation.

## **2.7 Engagement Towards the Conservation of Vernacular Architecture of the Traditional Malay House (NSTMH)**

As noted by Wan Ismail and Shamsuddin (2005), further research is required on the personal attachment to place and time, due to the absence of a sense of belonging, which is caused by change of ownership and can be seen most often in today's scenario of the TMH. Fielden (2003) also emphasised that the survival of old buildings depends on many factors and one of it is in terms of how much they are valued, economically, culturally and socially. One aspect that may contribute to the challenges facing old buildings is the negative attitudes of users towards them, which may lead to a lack of desire when it comes to their conservation (Wan Ismail and Shamsuddin, 2005).

Some people take different approaches to conservation when it come their own buildings. According to Oliver (2006), the people of the Gediz villages in Turkey are more concerned about their way of life and how they interact and appreciate their internal social spaces, rather than the durability of the fabric of buildings. Furthermore, the state of vernacular buildings that are not conserved represent the attitudes of the society towards maintaining them. For them, everyone should learn to build a house themselves, which shares and reflects the approach towards preserving the NSTMHs.

People are more concerned about their own survival rather than becoming involved in raising enthusiasm for heritage conservation. As Wan Ismail (2010) pointed out, the younger generation is more enthusiastic about conserving their heritage compared to older people, but it needs to be investigated whether this depends on the condition of the house, their appreciation of conservation or about maintenance and repair. There is also a possibility that the owners might not perceive their own traditional houses as being part of heritage, due to a lack of awareness. This has sometimes posed questions of whether it is economical to retain the old buildings, or whether they should be replaced with new modern buildings. This also indicates the possibility that the owner is more concerned about the basic needs of survival, rather than enthusiasm for heritage conservation.

As referred to by Sia (2008), in the online news, entitled '*Passion for Preservation*', '*local villagers would throw these old wooden things underneath their houses where they would slowly rot away*'. Furthermore, he said that '*what is not valued by a local is prized by Mat Salleh (Foreigner)*', as they will buy things at a cheap price and export them to Singapore and Europe. He also mentioned that some of the TMHs were altered to incorporate modern concrete forms. He added that '*Often people will say, "susah" (difficult) to maintain, yet, in Sweden, they can maintain not only 600-year-old timber houses, but also whole wooden towns. Our houses are only 200 years old! So why can't we?*'

It is worthy in this research to investigate the broad range of owner attitudes toward conservation, any misunderstandings of the typology, and above all highlight good conservation practices, carried out as a result of the high quality of the timber constructions and successful response to the local social and geographic conditions. The quality of addition of various interesting features of the house owners through the opinion of experts and officials will have to be identified. Their continuous engagement towards protecting and conserving NSTMH is important for future benefits.

The engagement of the house owner can also be explored with regard to a local programme which involves the whole community in the *kampung* area, called a kampung homestay programme. Established in 1995, and in operation ever since, the *kampung* homestay programme in Malaysia indirectly promotes the TMH for tourism purposes. Strong engagement and support from house owners ensures an alternative source of employment for the villagers, thus creating long-term benefits (Ramele et al., 2013). This also needs further investigation.

The connection between vernacular architecture and house owners' engagement resembles a symbiotic relationship. According to Vellinga (2007), vernacular architecture is 'a source of traditional knowledge, skills and ideas, comprising practices, technologies, resources, and forms that often have developed as part of a continuous process of trial and error that can guide others to localized environmental challenges in a culturally appropriate way' (p. 126–127). Indeed, in Vellinga (2007), Paul Oliver also noted that 'the vernacular will have to play a serious

role in this respect where a majority of people still live in vernacular buildings and will continue doing so in the 21<sup>st</sup> century and throughout the world' (p. 127).

## **2.8 Changes in Vernacular Architecture of the NSTMH**

The ICOMOS Charter on the Built Vernacular Heritage (1999) also points out the changes that are to be expected and which refer to the inevitability of change and development:

‘changes over time should be appreciated and understood as important aspects of vernacular architecture.’

(Charter on the Built Vernacular Heritage (1999), Guidelines in Practice, item 6, p.28)

The Burra Charter (2013) also highlights the topic of ‘change’ under article 15, stating that change is:

... undesirable where it reduces cultural significance. (p. 6)

When change is being considered, a range of options should be explored to seek the option which minimise any reduction to its cultural significance: reversible changes should be considered temporary.

(The Burra Charter (2013), p. 6)

Changes happen everywhere. Life and environmental changes differ from place to place and vary from house to house because the attitudes of people differ with regard to the interplay of social and cultural needs and those of physical environments (Asquith and Vellinga, 2006). They make the questionable claim that vernacular traditions will be affected by ecological, cultural and technological changes as the vernacular is supposed to suit, adapt and respond to suitable possible approaches to changes, especially when dealing with modernity.

However, the NSTMHs seem to be disappearing to make way for people's current lifestyle needs which are affected by cultural change. This is due to a misunderstanding of the typology of the original house, which has led to different



characteristics in later additions and extensions to the houses. Of course, if the house owner does not have a knowledge of NSTMH architecture, then the elements of traditions will be more susceptible to change. Typical changes to the front, back, side or underneath of the house, are shown in Figures 2.15 and 6.4.

Defects and deterioration to the timber used in the houses are common in Malaysia's climate, characterised by its high humidity and high rainfall amounts (Ishak et al., 2012). These can in turn affect and contribute to changes to the form of the house. Most extensions to the TMH have consisted of building a new room at the time of a child's marriage (Carsten and Hugh-Jones, 1995) and (Idrus, 1996). This is what happens in the *Rumah Ibu* (main house), with the majority of people carrying on the same or similar changes by having fixed timber partitions.

Vellinga (2006) offers the insightful suggestion that any changes introduced to the vernacular by modernity seem to represent cultural decline and a loss of authenticity. The merging of both 'old and new' versions of the changes can often occur in unexpected ways, as shown in Figure 2.17.

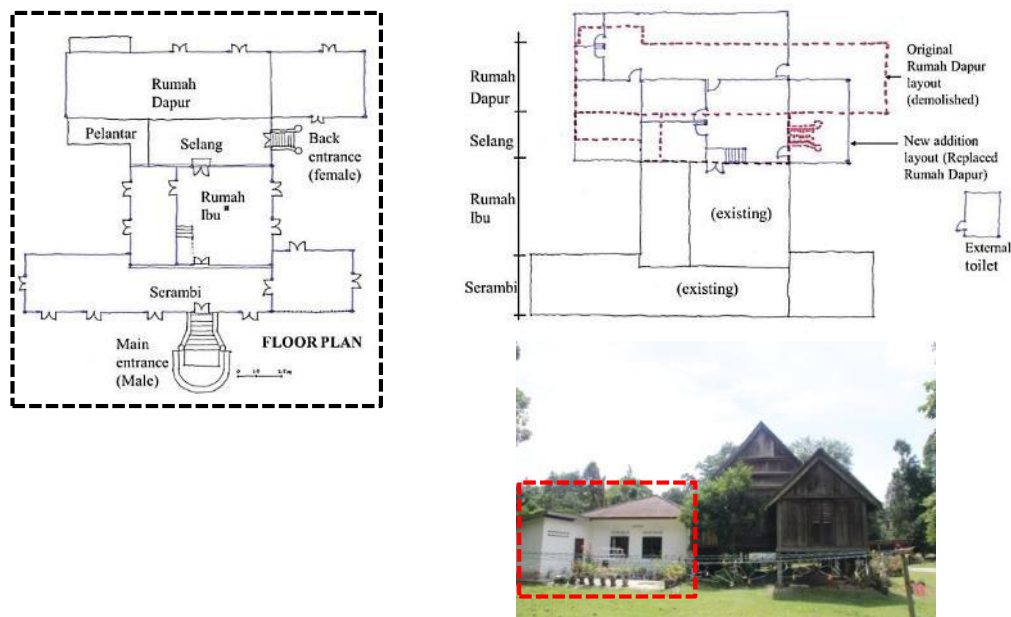


Figure 2.17: The typical layout of the NSTMH (left); Example of changes in *Rumah Dapur* (at the back of the house-dotted red line) (right) (Source: Author (2014))

Changes also appeared in the reconstruction of TMHs in Mini Malaysia, Melaka when the houses were replicated in a modern construction which different

from the original design. It gives a different impression and also misconceptions although it is more than superficial presentations to serve as a tourist attraction (Hilton, 1992). Rather, the houses are displayed through different styles, sizes, and full-scale decoration. These efforts are like ‘modern replicas’ of the TMHs, which are certainly not authentic vernacular or ‘post vernacular (Vellinga, 2007). The interpretation of the original construction is not well translated and will create misconceptions for those not previously exposed to this vernacular architecture. It will further transfer the ‘untrue’ understanding of other people and should be avoided as a means of dissemination of indigenous knowledge, especially with the young generation.

Vellinga (2006) also argues that a frozen understanding will deny the dynamic nature of building traditions and the meaning behind them, as the houses will only be seen in a context of musealization. Furthermore, the vernacular concept that covers the ‘distinctive cultural expression of people who live with or feel attached to a particular place or locality’ should be integrated and merged with modern traditions (Vellinga, 2006).

One of the most significant features of the TMH is that it can easily be enlarged and moved from place to place (Hilton, 1956), which allows flexibility in the house design. As noted by Utaberta and Spalie (2011), the organic concept of the TMH design enables changes to be made to its size, form and location. The practice of lifting (*usung rumah*) (Figure 2.18) and moving the whole house to another site within the same or different village demonstrates the flexibility of this type of dwelling (Carsten and Hugh-Jones, 1995). Although the house is physically re-sited, the context of the *kampung* for that particular house will be lost during the process if it changes character and environment, especially if it is converted to a museum piece in a different area. If the house is moved to a new site within the same *kampung* and environment, and without any change to its original function, then it would not be totally affected.

Cooperation amongst the villagers is very important in helping to transport the house. The house may be transferred to a new location for certain reasons, including, for example, sale of the land that it occupies, following a death or the birth of a child (Carsten and Hugh-Jones, 1995) or if the location of the house is no longer suitable due to any long-term illnesses affecting the occupants. The relocation of a TMH

sometimes creates a traditional impermanence of the house structure itself, causing it to lose its connection, especially when the house is being taken down part by part. This has happened to several NSTMHs, such as the *Rumah Dato' Perba Meon* and *Rumah Hajah Sali Salleh* and should be investigated further.

Although the house may be transferred within the same village, either by river or land, the fact that it is taken down part by part means that the condition of the house is not guaranteed when it is reassembled. This happened to *Rumah Tukang Kahar* and *Rumah Dato' Perba Meon*, where the house was not reassembled back to its original design and they would be useful case studies to investigate. Problems that may occur during the taking-down process include missing or degraded parts, sustained damage or even been extensive destruction during the transfer process. Furthermore, the 'new' *Tukang* or contractor may not possess the appropriate traditional skills required to reinstall the house, or there may be no system of part identification and tagging applied.

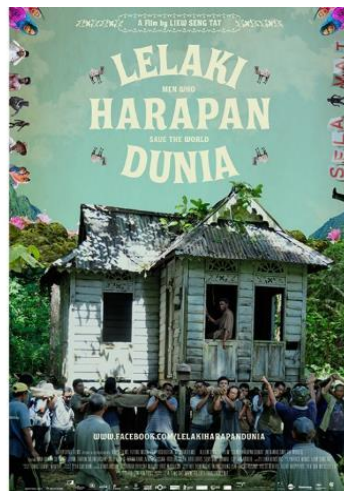


Figure 2.18: The 'usung rumah' technique of transferring a TMH from its original site to another place featured in the November 2014 film *Lelaki Harapan Dunia* (Men Who Save the World). Source: [https://en.wikipedia.org/wiki/Men\\_Who\\_Save\\_the\\_World](https://en.wikipedia.org/wiki/Men_Who_Save_the_World), [Accessed dated 2 July 2015]

The Ampang Tinggi Old Palace in Negeri Sembilan, built in the 1860s, has been dismantled and relocated several times, resulting in much alteration (Waterson, 1990). It is due to the lack of understanding in traditional knowledge about the house construction and its characteristics. It was suggested by Nugroho (2013), the traditional knowledge only remained with anthropologists and historians, rather than

with the local community, and this further contributes to the influence of Western modernisation. The use of modern materials and technologies is one of the factors that can lead to the changes and abandonment of vernacular architecture (GhaffarianHoseini et al., 2009).

Other challenges to the future of the style are diminishing resources within the area, especially in terms of timber and bamboo. People nowadays have ceased using bamboo in the construction of their houses. It is more often used by craftsmen, rather than as a multifunctional construction material. This may be because it is no longer regarded as being necessary or because it is difficult to find locals with traditional indigenous skills. It is worthy investigating the availability of materials in the next generation.

Even plain materials like thatch palm requires skills to produce it, which is why many house owners have tended to replace it with modern zinc and metal decking, dramatically altering the character of the house in the process, in an attempt to increase the durability and long life of the materials. Deforestation in tropical areas has led to the depletion of the most durable timber resources. As reported by Sia (2008) in his interview with Alex Lee (Director of Terrapuri Resort),

*'Old Chengal wood is very lasting and superior to new Chengal wood which comes from the less mature trees.'*

This has a similarity to the procurement problems of other traditional materials, especially with regard to industrially produced lime or even cement, compared to non-hydraulic lime or cement where hydraulic lime can be natural and as found. Sia (2008) also claimed that traditional builders and craftsmen have lost their jobs due to a preference among local villagers for concrete rather than timber houses. Above all, direct exposure to the modern-day life style of a younger generation has led to them migrating from rural to urban areas in pursuit of their dream. The migration has increased the gap of leaving their *kampung* area and has automatically led to their inheritance houses left abandoned and derelict without proper care.

According to the Department of Statistics Malaysia (2010), Malaysia's rapid development has led to a sharp increase in the urbanisation of the country's population, with 71% of the population residing in urban areas in 2010, up from 62% in 2000. The Negeri Sembilan state contributes approximately 66.5% level of urbanisation (2010). This level will affect the survival of historic environments such as NSTMH for younger generations, if no urgent action is taken. Urbanisation within this developing country is also affecting historical environments, by the international styles of new building (Vellinga et al., 2007). This in turn has led to changes to the historic environment that need to be managed in a sustainable way.

Changes also relate to how people interpret or view any approaches taken, including those to reconstruct, replicate or turn the original design of the house to a 'new house'. According to Vellinga (2007), a modernised house in Sumatera, Indonesia may be acceptable for its inventiveness. Such 'new houses' are a 'distinctive cultural expression of people who live in or feel attached to a particular place or locality, and as such they form part of, or indeed help to constitute the local and shared architectural dialect' (p. 125). These have also, however, undergone significant changes in their construction, use and meaning. Vellinga (2007) asserted that in such a context, 'vernacularized' modern buildings are still genuine in themselves (if they repeat the same thing again), but if they 'imitate' a new layout, form and function, they become totally different. Although it teaches us how, in time, and 'interdependently linked to such cultural identities, traditions become established, change, adapt, and ultimately endure or disappear' (p. 125). A totally different approach is employed in the context of the NSTMH, however, whereby owners prefer to demolish the original *Rumah Dapur* (kitchen) built on stilts and replace it with a new one built at ground level. This requires further investigation.

Furthermore, environmental pressures also have an impact on the social, cultural and economic changes which come in many forms, including the processes of population growth and urbanization, as well as rapid technological change (Vellinga, 2014). In this case, the transmission process is important to identify the challenges, changes and its management made to the existing form, fabric and function. Managing

changes is one way to sustain the conservation of built environment which further discussed below.

## **2.9 Managing Change**

A cautious approach to change is also supported in the Burra Charter (2013), which stated that as little as possible should be carried out in order to retain the historic environment's cultural significance. There should be a cautious approach to change to avoid distortions to the form and fabric of an NSTMH that may occur out of conjecture. Proper research should therefore be undertaken prior to any decisions being made, especially with regard to new interventions that incorporate new, modern ways of life.

The integration of modern and traditional living can sometimes create boundaries that need to be overcome. Changes may be necessary in order to incorporate the new lifestyle within the significant cultural environment of the original form, fabric and function. Change is undesirable when it leads to a reduction in the value of the original form. Despite, Vellinga (2007) asserted that vernacular architecture also 'part of dynamic building traditions that, like all traditions, will become established, evolve, combine, adapt, endure, or disappear. He totally agreed that combining traditional and modern elements, that are uniquely related to the particular social context in which they are found' (p.125).

Value can be reduced through addition (extension), the use of inappropriate materials, abandonment or the natural processes of decay and degradation. A loss of value leads to a devaluation of the building's significance in terms of its cultural heritage, resulting largely from changes to the original character and appearance of its form, fabric and function. This process may take place gradually over a period of time. However such changes can be important when they occur in harmony with the existing character without leading to compromise any of its original characteristics.

It should also be recognised, however, that not all changes are worthy of conservation. Conformity of all parts of a building to a single period will not normally

be the goal of any conservation work on vernacular architecture because of the responsive to nature. It very much depends on the aims of the individual project in question. It may be impossible to return to the original design, for example, even if this is what is intended, if elements of the historical documentation are no longer available.

Petzet (2009), in his paper *International Principles of Preservation*, raised the question of whether we are looking at the conservation of a building itself or rather at managing change? The Burra Charter (2013) also pointed out that,

Non-reversible change should only be used as a last resort and should not prevent future conservation action.  
(p. 6)

At some points, changes should accommodate a level of tolerance in terms of decisions to implement conservation works. As highlighted by Petzet (2009), the dynamic process of classical values that described in a biased way in the ICOMOS Nara Document on Authenticity (1994) will keep transformed as a continuous process and not static. Managing the changes provides a means of protecting the site or monuments as a fundamental process in tolerating them. Nowadays, we face huge new challenges, especially when seeking to address the impacts of climate change, which are unpredictable and should not be ignored. The same applies to the main challenges involved in fighting for conservation and not against it. We cannot compare dramatic changes to our cultural landscape with the past, including villages, as societies progressed then inevitably the demolitions happened and characterised in radical change.

Changes do sometimes affect how people behave and communicate. According to Watson (2013), some changes require the appreciation and acceptance of the community or owners, who should be the first people to address the change taking place. There is a need to devote much greater effort to improving the attitudes of owners involved, rather than just those of the professionals. Further away from change taking place on site, many important decisions are taken by politicians and administrators, the impact of which may be crucial even though they have no direct involvement in the conservation works and need further investigation.

There needs to be a variety of approaches that deal with changes on both a macro as well as a micro level, to balance the impact on the built heritage environment. The management of change is also influenced by the ways in which experts make their decisions, as some have claimed that their decisions were taken based on their levels of confidence and knowledge (Watson, 2013).

Another example of buildings negatively impacted by change, leading to them becoming empty shells, is when the owners are unable to afford the costs of their upkeep. As has been the case with a number of country houses in Scotland, owners with an insufficient level of financial resources for the upkeep of the buildings may seek other options, and may even:

be ambivalent or unsympathetic to the property being repaired and  
equally hostile to the transfer of ownership to a restoring purchaser.

(Scottish Civic Thrust, 2006, p. 7)

Watson (2013) adds that without a proper system for finding solutions and making decisions when considering economic pressures as part of the process of managing changes, destruction of the building may be the end result. This system should become focused and adapted to the Negeri Sembilan context.

Although some scholars agreed that the vernacular traditions in serious doubt and are steadily replaced by modern technologies, materials and forms. Some detailed used to be ‘sustainable’, the fact that it is no longer used and maintained (Foruzanmehr & Vellinga, 2011).

## **2.10 Conservation Practice in Malaysia**

According to Wan Ismail (2010), consciousness within Malaysian society with regard to conservation is still new, especially given that conservation works only began in the 1960s, much later than in Europe (Ahmad, 1994). Acts and decrees were introduced from both the federal and local state governments, such as the Antiquities Act 1976 (Act 168), the Town and Country Planning Act 1976 (Act 172), the Local Government



Act 1979 (Act 171) and the National Land Code (Johar et al., 2011). The latest NHA (Act 645) was launched in 2005 to strengthen protection of the built heritage environment in Malaysia. Despite this Act being established for almost 10 years, there are some apparent weaknesses and there is a need of some enhancement, especially with regard to the implementation phase. Currently, conservation works depend greatly on the Act and the guidelines set out in 2012, in addition to other relevant measures related to heritage enactments at local level.

#### **2.10.1 Conservation Effort in the NSTMH and other TMHs**

In Malaysia, recent referral to the National Heritage Department's website revealed that only five (5) traditional houses (timber buildings) are listed by the National Heritage Act 2005. Of these five, only one – *Istana Lama* Seri Menanti (now a royal museum) in Negeri Sembilan – is listed at a National Heritage level. The other four houses in the heritage list (significant to local level) are *Rumah Penghulu Abdul Ghani* in Melaka (now a gallery); *Istana Ampang Tinggi* and *Model Rumah* in Negeri Sembilan (now galleries); and *Rumah Tele* in Terengganu. More importantly, only five out of over 300 timber buildings feature in the list. This exposes very little effort considering the vast amount of beautiful, unique and variable TMH forms throughout Malaysia.

Melaka is the only state which is advanced in its efforts to conserve its own heritage, especially the TMH. This is not only because Melaka became a World Heritage Site in 2008, but also of its own earlier Preservation and Conservation of Cultural Heritage Act of 1988. This act covers the many conservation projects of selected Melaka traditional houses, but also promotes exhibition projects of traditional architectures, such as *Mini Malaysia* and The Association of Southeast Asian Nations (ASEAN) (various TMHs in Malaysia), a concept similar to expo schemes such as the Skansen in Sweden (see section 3.4.4). The latest project to be completed, *Perkampungan Hang Tuah*, shows a new construction of typical Melaka traditional houses that reflects the legacy of the Five Malay warriors (Figure 2.19). Another type of approach opted more for interpreting conservation through the development of a new resort, *Desa Balqis*, Melaka. This resort claims to feature unique contemporarily

designed wooden houses set against the norm of TMHs. An explanation in depth of the relocation concept of the TMH is given in section 3.4.



Figure 2.19: The '*Perkampungan Hang Tuah*', Melaka  
*Source: Author, 2014.*

This approach also exhibits some misinterpretation of modern construction to suit the contemporary needs and materials as in Figure 2.20.



Figure 2.20: One of the misinterpretation construction of *tanggam* system (*left*) and installation of the gutter with clear glass to suit to modern context (*right*).  
*Source: Author, 2014.*

### **2.10.2 Act and Provision on Historic Buildings in Malaysia**

The National Heritage Act 2005 (Act 645) is the latest legal act and has replaced two previous acts: the Treasure Trove Act (*Akta Harta Karun*) 1957 and the Relic and Antiquities Act (*Akta Benda Purba*) 1976. It is an act based on UNESCO Conventions, to protect, safeguard and preserve the tangible and intangible aspects of natural and cultural heritage in Malaysia. Although Malaysia proclaimed this act eight years ago, it is still questionable, to some extent, whether more historical buildings will be ruined if it is not amended (Wan Ismail, 2010). Recently, in 2012, the '*Garis panduan Pemuliharaan Bangunan Warisan*' (Guideline in the Conservation of Heritage Buildings) was launched to support the National Heritage Act 2005. This guideline is meant for the implementation of conservation works of heritage buildings.

In Malaysia, heritage conservation legislation is normally divided into two types: federal level and state level. For the federal level, laws passed by Parliament are called Acts, while at state level, they are referred to as Enactments. At the federal level, there are a few acts related to the conservation of built heritages, such as the National Heritage Act 2005 (Act 645), the Local Government Act 1976 (Act 171) and the Town and Country Planning 1976 (Act 172). Meanwhile, at the state level, they are restricted to the relevant states, with the Federal Territory Act 11982 (Act 267) and are found only in Kuala Lumpur, Labuan and Putrajaya: the Melaka Preservation and Conservation of Cultural Heritage Enactment 1988, the Johore Enactment 1988 and the Sarawak Cultural Heritage Ordinance (1993). At the state level, they are imposed by local authorities. Moreover, the conservation of built heritage in Malaysia also considers and refers to prominent international charters, such as the ICOMOS Burra Charter and the Venice Charter (1964). This is to ensure that all conservation works are carried out in accordance with the required international conservation norms and standards.

For example, in Melaka, they have been using an Enactment, the Melaka Preservation and Conservation of Cultural Heritage Act since 1988. This is purposely used to monitor, preserve, conserve and enhance cultural heritage in Melaka State. Moreover, this is the good example of current local legislation regarding the

conservation of Melaka TMHs in comparison to other states (see section 3.3.1). The further investigation needs to be carried out on how the enactment was implemented.

### **2.10.3 The Negeri Sembilan Context**

Negeri Sembilan does not currently have any Acts or Provisions regarding its built heritage environment, and certainly no policy or guidance that protects the TMHs or timber buildings. In retrospect, these Acts and Enactments have been rather insufficient, especially in addressing the conservation of traditional timber buildings in Malaysia in an integrated manner. For instance, by including the importance of preserving the TMHs. Efforts to create a proposal of an Act are being made (see Chapter 5, section 5.5.4, p.219), but there is little evidence the exact requirements laid out in the NHA 2005 are persistently executed by each state's government. All relevant acts (local, national and international) will be reviewed to gaining insightful information regarding the guidance and implementation of conservation works in Negeri Sembilan, in order to achieve the third objective of this study.

## **2.11 Chapter Summary**

This chapter has provided an overview of the literature and has laid out the underlying terminology of vernacular architecture, focusing on the built form of the TMH and the NSTMH in particular, notably the challenges and their importance from a conservation perspective. The overall picture of conservation practice was also examined not only in Negeri Sembilan but wider Malaysia.

As previously discussed, all vernacular traditions constitute dynamic and creative processes that result from cultural encounters, borrowings and conjunctions and, as such, it needs to be accepted that these should be allowed to change and develop (Vellinga, 2007). Vernacular architecture also teaches us much about 'how building traditions are transmitted, developed, and changed, and will also give us a better insight into the contemporary perception, appreciation, and representation' such as the 'new vernacular' that represents an amalgamation of the traditional and the modern, thus

making up the contemporary and future vernacular. (Vellinga, 2007, p. 125). In other words, what we learn from the past can be put to good use in the future.

There are many challenges regarding not only the condition of physical vernacular architecture buildings, but also challenges that arise from the poor attitudes of Malaysian people, different mentalities and perceptions, power and the allocation of roles and responsibilities for preserving old buildings at the local, national and international levels. The abandonment and redundancy issue of the NSTMH, or of vernacular architecture in general, is related to the culture that produces these forms of architecture that are rooted in places, communities and their traditions (Vellinga, 2014). Changes does happen, but how it is managed is down to the communities and their creativity and inventiveness (Vellinga, 2007). The strong engagement of communities is important in that it will determine the forms of adaptation in meeting their contemporary needs and at the same time conserve the built heritage environment of the NSTMH. Only appropriate approaches that are well blended with local conditions can be used as options for safeguarding this heritage.

Chapter 3 will provide some international context of conservation experiences in mapping the theoretical framework of this research.



## **CHAPTER 3**

### **LITERATURE REVIEW: PRINCIPLES AND VERNACULAR CONSERVATION PRACTICES**

#### **3.1 Introduction**

This section summarises the literature review of the principles and vernacular conservation practices and is divided into several themes such as conservation principles of vernacular architecture in the international context with the collection of experiences of the similar cultures both local and international. The relocation concept was further highlighted in this study as an established practice in the Malaysian context.

#### **3.2 Conservation Principles of Vernacular Architecture**

The ICOMOS Principles for the Preservation of Historic Timber Structures (1999), in addition to the ICOMOS International Wood Charter, are the only forms of international guidance to focus specifically on the conservation of historic timber buildings (Worthing and Dann, 2000). The Wood Charter is relevant for any type of timber building deemed to have a cultural significance, and which is to be protected and preserved. The Charter contains some basic and universally applicable principles and practices, but also comprehensive guidance in terms of inspection, recording and documentation, monitoring and maintenance, interventions, repair and replacement, historic forest reserves, contemporary materials and technologies and also education and training. This is a very useful checklist when creating a new field, as it is expected to happen with the organised protection of TMH in Negeri Sembilan. This charter concurrently used with other related provisions set out by UNESCO and ICOMOS.

### 3.2.1 International Context on Conservation Principles of Vernacular Timber Architecture

All the elements contained within the relevant charters and principles (both international and local) will be analysed to identify an approach to be adapted for the Malaysian context, concurrently aiming to achieve the third objective. Some of the UNESCO and ICOMOS conventions will be used, such as the Charter on the Built Vernacular Heritage (1999), ICOMOS Charter: Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage (2003); the Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013); International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964); ICOMOS Principles for the Recording of Monuments Group of Buildings and Sites (1996); ICOMOS Guideline on Education and Training in the Conservation of Monuments Ensembles and Sites (1993); and the Scottish Historic Environment Policy (2011), for guidance and reference. According to Worthing and Dann (2000), the Burra Charter is the most widely respected of the more recent international charters.

Close analysis was carried out on the Burra Charter for it to be used as basic guidance towards the third and fourth objectives of the research (Table 3.1).

Table 3.1: The criteria in the Burra Charter, The Australia ICOMOS Charter for Places of Cultural Significance (2013)

(Source: Adopted from the Burra Charter (2013))

Preamble		
<ul style="list-style-type: none"> <li>• Definitions</li> </ul>		
Conservation Principles	Conservation Processes	Conservation Practice
<ul style="list-style-type: none"> <li>• Conservation and management</li> <li>• Cautious approach</li> <li>• Knowledge, skills and techniques</li> <li>• Values</li> <li>• Burra Charter Process</li> <li>• Use</li> <li>• Setting</li> <li>• Location</li> <li>• Contents</li> <li>• Related places and objects</li> <li>• Participation</li> <li>• Co-existence of cultural values</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation processes</li> <li>• Change</li> <li>• Maintenance</li> <li>• Preservation</li> <li>• Restoration and reconstruction</li> <li>• Restoration</li> <li>• Reconstruction</li> <li>• Adaptation</li> <li>• New work</li> <li>• Retaining or introducing use</li> <li>• Retaining associations and meanings</li> <li>• Interpretation</li> </ul>	<ul style="list-style-type: none"> <li>• Applying the Burra Charter Process</li> <li>• Managing change</li> <li>• Disturbance of fabric</li> <li>• Responsibility</li> <li>• Direction, supervision and implementation</li> <li>• Keeping a log</li> <li>• Records</li> <li>• Removed fabric</li> <li>• Resources</li> </ul>



As mentioned in the ICOMOS Built Vernacular Heritage (1999), there are five principles of conservation that should be considered, even in vernacular architecture. All work were carried out with multidisciplinary expertise, to recognise change and development, as well as respecting the community's cultural identity. All contemporary work also respect the cultural and traditional values, preserving at best, according to the groups and regions, and understanding the uses, traditions and intangible values that are associated with the overall physical and spatial form of the buildings. According to Oliver (1997), the principles of vernacular architecture that must be considered when establishing values are cultural traits, the role of the environment, the availability of materials and building resources, construction processes, symbolism and decoration and the particular link to specific uses and functions.

There are three approaches in vernacular architecture, the archaeological approach (a direct collection of the body of knowledge), the spatial approach (interdisciplinary conceptual discussion) and the recording and documentation approach (methodological). Earlier approaches to the study of vernacular architecture incorporated an aesthetic approach, related to the ideas of quality and value. According to Ames and Hamroun (2011), vernacular architecture is based on an empirical methodology and its character can only be understood within a community that built it. Archaeology approaches vernacular architecture through sequences of changes that can be determined by building periods. Discovering the significance of social and environmental conditions becomes part of the conservation process, leading to the determination of principles for conservation that highlight the visual and aesthetic character, without any loss of style.

Furthermore, there are different patterns of use with regards to socio-cultural phenomena, economic activities, religious belief, tradition and cultural values. The uses and functions in the social structure and the status and authority of the owner are often marked by differentiation in the building scale, according to rank, power or wealth. In contrast, limited building resources and a lack of recognition of the differences between builders and inhabitants of totally distinct cultures should be

recognised and addressed, in order to conserve vernacular architectures for future generations.

The principles set out in the Burra Charter are often used as guidance to protect cultural heritage (Chan, 2011). This promotes a holistic approach that involves a process of managing changes which should be progressively applied with knowledge and an adaptable approach towards sustainable practices. Chan (2011) also mentioned that most conservation charters reflect the local context and requirements that meet specific cultural circumstances and the Burra Charter is used as a closed and relevant reference in timber conservation practices.

According to Chan (2011) and her report *Preservation and Restoration of Timber Heritage Structures*, these buildings are getting less attention within the profession. Furthermore, the scarcity of good-quality timber, diminishing traditional skills against standardised and industrialised modern timber construction pose challenges for timber conservation activities. To overcome this, proper training were promoted to enhance traditional skills in timber conservation. This is a universal problem and very few colleges in the world offer specialist and formal training in timber traditional skills, when compared to stone masonry for example.

Stewart Brand, in his book *How Buildings Learn: What Happens After They're Built* (1995), provides an in-depth investigation into the concept of vernacular building, in the context of historic and cultural architecture in America. As a progressively thinking person, through the sustainability movement, his approach to the vernacular process is more scholarly rather than aesthetic. Brand views the vernacular process as an organic yet ordered process, in which cultures evolve steadily over time and he examined them through the concepts of constraints, durability and thrift, which are values that affect even contemporary architecture and therefore can be explored and presented in the conservation of any vernacular settlement.

It has been agreed that the more specific the conservation approach is, the more systematic the survey and recording of the vernacular architecture should be, especially when it is based on scientific principles as a whole (Oliver, 1997). In general, any intervention (restoration, rehabilitation, reconstruction, relocation,

replication, etc.) should follow the following principles as highlighted by Ames & Hamroun (2011):

- Minimum alteration of historic fabrics;
- Minimal risk of significant loss, damage or uncertainty in performance, through intervention and selection of materials;
- Reversibility of interventions;
- Retention of maximum use of the original structure;
- Distinctive or distinguishable use of new and additional material culture;
- Respect for the quality of place;
- Preference for original materials and workmanship;
- Longevity of the finished work.

Although many of the international guidelines, charters and policies have proved helpful in assisting the protection of historic sites worldwide, they sometimes do not meet the needs of local people and are not viable on a global scale which sometimes can overwhelm local values and practices (Stubbs, 2009). Minimum alteration with minimal risk of significant loss of their cultural value including form, fabric and function in any interventions especially in the local context of NSTMH. The use of new material culture should be fully understood of its characteristics not only respecting the quality of place but also its workmanship, the reversibility and the integrity of the whole process should be considered.

Furthermore, vernacular architecture is not adequately addressed in the Venice Charter as compared to the Burra Charter, including the conservation of traditional methods (Stubbs, 2009). This is supported by, as in the Burra Charter (Article 4.2),

Traditional techniques and materials are preferred for the conservation of significant fabric. (p.4)

In the end, the basic principles in any intervention, including any person should consider an ethical approach based on integrity and authenticity (Orbasli, 2008). According to Orbasli (2008), the overall approach should consider the basic conservation principles as explained in Table 3.2.

Table 3.2: The basic principles of building conservation  
(Source: Orbasli , 2008)

NO.	THE BASIC PRINCIPLES OF BUILDING CONSERVATION	
1.	Understanding	<ul style="list-style-type: none"> <li>• Working with the evidence</li> <li>• Understanding layers</li> <li>• Setting and context</li> </ul>
2.	Implementation	<ul style="list-style-type: none"> <li>• Appropriate uses</li> <li>• Material repairs</li> <li>• Tradition and technology</li> <li>• Legibility</li> <li>• Patina of time</li> </ul>
3.	Evaluation	<ul style="list-style-type: none"> <li>• New problems may require new approaches</li> <li>• Sustainability</li> <li>• Interpretation</li> </ul>

Furthermore, according to Ames and Hamroun (2011), there are several elements that can assist people in increasing their understanding of vernacular architecture, and thereby conserving it:

- 1) Understand the scale of the individual building within its environment;
- 2) Buildings are subject to changes through time, either by addition or subtraction, from what they are supposed to be;
- 3) All elements are interconnected and represent different changes and deteriorations, which need an effective conservation strategy;
- 4) The documentation process is critical, because it stores a record of what was there;
- 5) Thinking of the challenges for new research in the future;
- 6) The planning process in conservation decisions, especially the historic context and its significance, building analysis and treatment plan and land use development and treatment to the building;
- 7) Buildings should also be part of the sustainable resources.

A vernacular building is also regarded as architecture without an architect and is beyond being picturesque. It was developed through experiences as seen directly through people's own eyes, which have seen fingers that have touched and minds that

have inquired into the wholeness of their own environment. The memory of these senses enables them to feel at home, which creates a strong connection between them (Glassie, 2000).

The experiential qualities of vernacular architecture exhibit an order that fits together in a composition that creates its own typologies. The values are composed of the connections of the differential experience between an exterior to see and an interior to use (Glassie, 2000). Furthermore, the qualities (sensory delight) of the vernacular building have enriched modern architectural vocabulary, which makes these qualities and values relevant to the contemporary debate and aid their conservation. The design and construction type of joinery, the typology of the form and layout, materials and techniques are all factors that can be explored and applied to suit the modern environment.

As affirmed in the Charter of Venice (1964) and the Nara Document on Authenticity (1994), values are the main factor in identifying the authenticity of cultural properties. They may differ from culture to culture, but the respective values are authentic within the cultural context to which they belong. Vernacular architecture is no exception. Should the building be moved to somewhere else (e.g. an open-air museum), the authenticity of the building would be compromised.

Besides the historical and use values, the aesthetic qualities of the vernacular architecture also play a role in determining the unique identity of the cultural context to which they belong. These aesthetic qualities appear symbolic in representing the belief and suit the architectural functions as a whole. The traditional beliefs and customs are represented through the community and the identity of its own traditions. Vernacular architecture shows the culture that was practised every day, providing evidence of a community's way of life.

Built vernacular heritage has been accepted with its informal but orderly appearance that is appropriate for its intended uses and functions. Although it contains a record of the historical background of the society that evolved through time, proper care needed to retain the harmonious tradition of its own character.

As mentioned in the ICOMOS Built Vernacular Heritage (1999), survival of this built heritage is threatened by the forces of economic, cultural and architectural homogenisation. These issues need to be addressed by all stakeholders, including governments and professionals, as well as by the community. Support from the community is an important factor and one that should be given serious consideration. The support includes continuous effort and support from the community is about participation, beyond the day to day maintenance. Maybe some initiatives can be done collectively, like associations, collective funds, mutual help, sharing of knowledge, workshops, etc. These activities may have to be coordinated by museums, local authorities or Village Committees as in the case of the *kampung*. The availability of legislation, financial support and the responsibility of the government can strengthen the spirituality and motivation of the community, which can be further enhanced naturally by the members.

Furthermore, Ames and Hamroun (2011) suggested that appropriate conservation and treatment strategies should have some continuity, starting from the research design and ending with an evaluation of both the buildings and their environment.

### **3.3 Collection of Experiences**

To enrich the context, it is worthy to provide examples from other similar cultures that have unique and successful stories, whether these are from a theoretical or practical background. An exploration of their approaches is one way of adopting and adapting, learning and understanding prior to the applying relevant aspects to the local context of the NSTMH.

#### **3.3.1 TMH Conservation in Melaka State**

At a local context, Melaka is the nearest example worth looking at, as almost 294 traditional houses were listed as ‘heritage *kampung*’ in 2012. They consist of individual houses located in three different *kampungs*, namely *Kampung Parit Sidang Seman*, Sungai Rambai (117 houses), *Kampung Banda Kaba* (62 houses) and

*Kampung Bukit Cina* (115 houses). These individual houses in each *kampung* were listed under the local Preservation and Conservation of Cultural Heritage Enactment 1988 (hereafter referred to as **L1**).

Conservation of the Melaka TMHs began in 2001 with the preservation and conservation fund of Melaka State. Criteria for conservation included houses more than 50 years old and that were listed under this enactment. Not only that, if the house was less than 50 years old but featured a unique design, and was the only one of its kind in Melaka, it would also be counted. It also involved houses that not only had significant historical background to the State or the *kampung* itself but which represented valuable property for the Melakan economy.

Individually listed Malay houses were preserved depending on their location. If a *kampung* contains a majority of Melaka's TMHs and still practises traditional customs, the whole would be gazetted under the enactment as 'Heritage *Kampung*'. Conservation of the houses was conducted in stages, depending on funding availability. Meanwhile, the conservation of groups of TMHs was already being carried out in *Kampung Morten*, the only Malay *kampung* which exists in the middle of Melaka city centre, through federal allocation. In another case, TMHs that were selected outside a listed *kampung* will be conserved individually by means of a 'one-off' budget.

*Kampung Morten* is an exceptional case where most of the TMHs were rebuilt in a layout similar to a modern housing scheme. The current *Kampung Morten* has been preserved after it was declared a heritage village under the state enactment (**L1**). It is not like an original setting of the *kampung* which is supposed to be more scattered and sparse between one house and another depending on their locations. Instead, it is a more open area like a green compound with fruit and coconut trees that can normally be seen as part of an original *kampung* setting. Some people might agree that it is a similar concept which can be duplicated in another location. This concept was applied in this specific location (city centre) and was modernised by standardising the application of modern materials (especially red metal roofs) in order to control its development as a tourist attraction (Figure 3.11).

One way in which house owners may receive help to protect their houses is by making an application directly to the PERZIM (Melaka Museum Corporation) themselves. If approved, they will also receive guidance from PERZIM on how to protect their house. In addition to this, the owner is encouraged to collect donations or reasonable fees from whoever wishes to enter their property (i.e. tourists). Funds obtained in this way may be used for maintenance purposes for the house only. The house owner could also become involved in a homestay programme if no changes are made to the physical design and characteristics of the house without PERZIM's permission. The benefit of doing this is that PERZIM can "collect" a body of TMH and create a comprehensive narrative as a tourist attraction in Melaka. With the existence of the heritage enactment, Melaka has demonstrated a feasible method for protecting its TMHs. This kind of approach may be considered as part of action that can be implemented in the Negeri Sembilan context.

Another approach that is also relatively close to the NSTMH is the relocation approach. It is worth examining other places in the world where this approach has been used. As was seen, the TMH and particularly in Negeri Sembilan is built inherently in a way that can be relocated and this occasionally happened naturally in the past by the owners or the community.

### **3.4 The Relocation Concept**

#### **3.4.1 Malaysia Examples**

According to Gregory (2008) that various ICOMOS Charters do not advocate the relocation approach, and some of them expressly restrict it, as stipulated in Article 7 of the Venice Charter (1964):

A monument is inseparable from the history to which it bears witness and from the setting in which it occurs. The moving of all or part of a monument cannot be allowed except where the safeguarding of that monument demands it or where it is justified by national or international interest of paramount importance.

(ICOMOS Venice Charter (1964), p.3)



A more pragmatic approach to relocation is that suggested in Article 10, ICOMOS New Zealand's Charter for the Conservation of Places of Cultural Heritage Value (2010):

The on-going association of a structure or feature of cultural heritage value with its location, site, curtilage and setting is essential to its authenticity and integrity. Therefore, a structure or feature of cultural heritage value should remain on its original site.

Relocation of a structure or feature of cultural heritage value, where its removal is required in order to clear its site for a different purpose or construction, or where its removal is required to enable its use on a different site, is not a desirable outcome and is not a conservation process.

In exceptional circumstances, a structure of cultural heritage value may be relocated if its current site is in imminent danger, and if all other means of retaining the structure in its current location have been exhausted. In this event, the new location should provide a setting compatible with the cultural heritage value of the structure.

(ICOMOS New Zealand (2010), p.4)

The revision of the Burra Charter (2013) also stated that an appropriate location and use should be considered in the case of relocation. Articles 5 and 6 of the ICOMOS Principles for the Conservation of Timber Structures (1999) considered an intervention made to the original fabric of a building if it follows reversible and traditional methods. In this context, a timber structure might require complete or partial dismantling and subsequent reassembly with minimum alterations.

Recently, Article 9 of the Burra Charter (2013) also asserted that relocation (of a building) may be acceptable if it is 'the sole practical means of ensuring its survival', designed for (removable) and with a history of relocation. Most of the conservation charters and scholars Orbasli (2008), concerned about the authenticity of a conservation approach, stress that a building should not be isolated from its setting and its context. However, the original design of the NSTMH was made with this very purpose in mind. The '*usung rumah*' concept is quite common to the TMH in general and many examples have historically been relocated and transferred to a new site.

Although it does still occur, it is quite rare nowadays to see the '*usung rumah*' concept in action. In the past, a house would be transferred to another place within the

*kampung* area for reasons related to the owners' health, as was the case with *Rumah Tukang Kahar*, for example. However nowadays, a TMH may be transferred anywhere in Malaysia, often out of its original context and setting and especially with a different use and function.


Probably, the relocation of NSTMHs such as *Rumah Tukang Kahar* (**HD5**) and *Rumah Maimunah Yaakub* (**HD9**), as discussed in Chapter 6 were initiated from the house owners who thought they were doing their best at the time. The relocations were directly linked with an action to protect and ensure their property survival. Relocation of historic buildings should be viewed as a last resort, as mentioned in Article C, Appleton Charter for the Protection and Enhancement of the Built Environment (1983). With exceptional views from all the other charters, this ICOMOS Canada Appleton Charter focuses on intervention is one charter that accepts the possibility of relocation, as stipulated in Article 3.17, where:

Dismantling and reassembly should only be undertaken as an optional measure required by the very nature of the materials and structure when conservation by other means impossible, or harmful.

(ICOMOS Appleton Charter (1983), p. 36)

In general, there are various reasons for relocating TMHs throughout Malaysia, but each reason has a similar intention in common – that of protecting and conserving the houses. Where the house is destined for touristic purposes as, for example, a boutique resort, museum or gallery, relocation has become an established practice.

This approach shows that to safeguard the future of this heritage, the authenticity of the house's place, location and setting has become secondary to preserving the fabric, even in a different context. The conversion approach of adapting the original design of the house into more 'usable' functions has proved valuable for the survival of a house from demolition and abandonment. Below are some examples of the relocations that have taken place all over Malaysia (Figure 3.1).

CODE	COLLECTION OF EXPERIENCES	
A	MALAYSIA (NATIONAL/LOCAL)	
R1	<b>Terrapuri Resort, Terengganu</b>	
		<ul style="list-style-type: none"> <li>• Relocated and refurbished 29 Terengganu Malay Houses (100 – 250 years)</li> <li>• Resort layout inspired by the lost Malay Kingdom of the 17<sup>th</sup> Century Terengganu Palace</li> <li>• A luxurious resort with air-conditioning, ceiling fans and modern bathroom</li> <li>• Display unique traditional decorations.</li> <li>• Bought first house in 1990 about MYR10,000.</li> </ul>
	<i>Source: <a href="http://www.terrapuri.com/">http://www.terrapuri.com/</a></i>	
R2	<b>Bon Ton Resort, Langkawi</b>	
		<ul style="list-style-type: none"> <li>• 8 Kedah TMHs (5 from island and three from mainland) range 60-120 years old and a few colonial buildings</li> <li>• Fully refurbished antique Malay <i>kampung</i> as Boutique Resort</li> <li>• Relocation started in 1995 to 2004 (8 TMHs and Chinese shop provisions shop to the undeveloped site with coconut plantation.</li> <li>• Took two weeks to dismantle and three months to reassemble by local skilled carpenter</li> <li>• Modern amenities were installed (air-conditioning, ceiling fan, modern bathroom facilities)</li> </ul>
	<i>Source: <a href="http://www.chiangraibulletin.com/2013/03/16/top-10-eco-chic-getaway-hotels/">http://www.chiangraibulletin.com/2013/03/16/top-10-eco-chic-getaway-hotels/</a></i>	
R3	<b>Rumah Penghulu Abu Seman, Kuala Lumpur</b>	
		<ul style="list-style-type: none"> <li>• Built between (1910-1930s)</li> <li>• Originally located in Kampung Sungai Kechil, Kedah (Northern Malaysia)</li> <li>• The house was left abandoned more than 15 years before it was bought and relocated (1996-1997) by Badan Warisan Malaysia (Heritage of Malaysia Trust), Kuala Lumpur.</li> <li>• Aim: to expose the TMH (rare in the city centre)</li> <li>• 15,000 out of 31,000 original roof tiles have been salvaged.</li> </ul>
	<i>Source: <a href="http://badanwarisanmalaysia.org/tint-sa/rumah-penghulu-abu-seman/">http://badanwarisanmalaysia.org/tint-sa/rumah-penghulu-abu-seman/</a></i>	


R4	<p><b>Malay Heritage Museum, Universiti Putra Malaysia (UPM)</b></p> <div>  </div> <div> <p><b>Four TMHs:</b></p> <p><b>1) Rumah Dato' Raja Diwangsa, Negeri Sembilan</b></p> <ul style="list-style-type: none"> <li>• built in 1935</li> <li>• from Kampung Merual, Seri Menanti, Kuala Pilah</li> <li>• First house has been relocated to the Malay Heritage Museum, UPM</li> </ul> <p><b>2) Rumah Bujang Selasar, Terengganu</b></p> <ul style="list-style-type: none"> <li>• close to 150 years old</li> <li>• from Kampung Tanjung Pasar</li> <li>• Second house to be relocated to the Malay Heritage Museum, UPM</li> </ul> <p><b>3) Rumah Kutai, Perak</b></p> <ul style="list-style-type: none"> <li>• more than 100 years old</li> <li>• From Kampung Pediat, Bota Kanan, Perak</li> <li>• Third house has been relocated to the Malay Heritage Museum, UPM</li> </ul> <p><b>4) Rumah Penghulu Mukim Kelola, Jerantut, Pahang</b></p> <ul style="list-style-type: none"> <li>• 90 years old (1925)</li> <li>• A typical <i>Rumah Serambi</i> Pahang</li> <li>• Reassembled in April 2015</li> <li>• Fourth house to be relocated to the Malay Heritage Museum, UPM</li> </ul> </div>
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Figure 3.1: Examples of relocated TMHs all over Malaysia.  
Source: As indicated)

From the examples above (Figure 3.1), the initiatives may derive either from private individuals and companies or government agencies such as Universiti Putra Malaysia (UPM) and the Negeri Sembilan Museum (NSM) towards relocation and adaptive reuse approach. The positive thing is that these TMHs have been saved from demolition and abandonment. In line with the recommendations of the charters, best efforts have been made to safeguard and reassemble the houses, based on knowledge and experience in traditional heritage. But to a certain extent, the original design concept is not fully understood, especially as there was a requirement to incorporate modern needs and functions.

There is a huge amount of effort involved in ‘saving’ a house by relocating it to a ‘new place’. They should be well studied prior to being merged with their new planning set up in terms of orientation, compound, etc. As mentioned in section 2.3, the orientation of the NSTMH has very significant meaning for its environmental context as well as for religious reasons (facing Mekkah). Consideration to respect these principles in determining its new position, as was the case for Malay Heritage Museum (**R4**) (see figure 3.1 for the code of the case studies). It will otherwise create a massive misunderstanding of its character to first-time viewers, especially tourists and young generations Terrapuri Resort (**R1**) and Bon Ton Resort (**R2**).

The approach taken by UPM (**R4**) is quite similar to *Mini Malaysia* (**NM1**) in Melaka (Figure 3.6). The only difference is that **R4** is a collection of different types of TMHs from different states using the ‘original house’ and not a new reconstruction, as in **NM1**. Otherwise, they shared a similar approach to education of the younger generation to learn about TMH. This has been the only university project in Malaysia where they surveyed, selected and relocated the potential TMHs to be part of their Malay Heritage Museum collection (Figure 8.9).

Comparing *Rumah Penghulu Abu Seman* (**R3**), *Istana Ampang Tinggi* (**R5**) and NSTMH Model (**R6**), all of them were converted into a gallery. **R3** is considered successful in terms of promoting the house to the public, with guided tours available for a minimal donation of MYR10.00 (£1.60). Museums offer various ticket types –

some have free admission, such as **R4**, **R5** and **R6**. The new location for **R3** is totally out of context (urban area) in the city centre of Kuala Lumpur, purposely done to expose people to the TMH, but is a rare sight in a city centre. **R5** and **R6** have free admission and form part of the NS Museum. Although both share similarly significant architectural characteristics, **R6** is not quite as well maintained compared to **R5**, which was left empty, with a plain and bare interior (Figure 3.2), but they both look like an abandoned house (Figure 3.3). These two NSTMHs should have been incorporated into cultural activities to bring them ‘alive’. Furthermore, the vehicle of an exhibition does not respect the original fabric of the house by hanging all the frames at most of the decorative timber panels (Figure 3.4).



Figure 3.2: Interior of Istana Ampang Tinggi (R5) – *left* and a model of a Negeri Sembilan house (R6) – *right* – with the main house door on the floor and covered with dust.  
(Source: Author, 2013)



Figure 3.3: The perspective of Istana Ampang Tinggi (R5) – *left* and a model of a Negeri Sembilan House (R6) – *right*.  
(Source: Author, 2013)



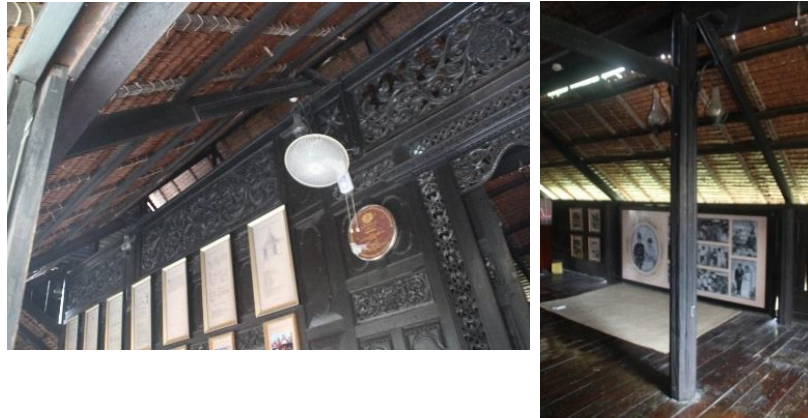


Figure 3.4: Exhibition tools hung at *Rumah Ibu* decorative timber panelling with wall-mounted fan and heritage plaque.  
(Source: Author, 2013)

Meanwhile, Terrapuri Resort (**R1**) and Bon Ton Resort (**R2**) had a similar experience in terms of the adapting of the old TMHs into a luxurious resort. They offer the experience of living in a traditional house environment by injecting new modern facilities for the comfort of guests (Figure 3.5). From a conservation point of view, this approach of creating a ‘new life’ for the old TMH can be seen as a potential method of preserving the houses. The authenticity concept may be lost here, however, as the function is different, with particular alterations made to accommodate modern facilities. This kind of experience is targeted only at certain people who can afford it and does not include ordinary people who live in the *kampung*.

As expressed by Alex and as reported by Sia (2008), the relocation approach is also one way for the traditional builders and craftsmen to generate income, who may otherwise have faced losing their jobs due to the demand for modern concrete houses. Besides this, it provides a way to save old carpenters’ skills from being lost. Most tourists visit these particular sites due to their unique heritage and culture.



Figure 3.5: Modern facilities, such as a bathroom, were incorporated into the TMH, as in *Terrapuri* Resort (R1)  
(Source:  
[http://www.terrapuri.com/rooms\\_villas.htm](http://www.terrapuri.com/rooms_villas.htm))[Accessed on 04 February 2015]

Other than relocation concept as explained in Figure 3.1, in Malaysia, there are also other examples of Open-Air Museum (OAM) that related to the TMHs (Figure 3.6). This approach is different with the international one as shown in Figure 3.7 as it exhibits a reconstruction of the traditional houses and not relocating any of the original buildings there.

CODE	COLLECTION OF EXPERIENCES	
	MALAYSIA (NATIONAL/LOCAL)	
NM1	Mini Malaysia and ASEAN Cultural Park	<ul style="list-style-type: none"> <li>Replicas of 13 type of the TMHs all over Malaysia (first phase) that represent 13 States.</li> <li>Open to public in 1986 (Mini Malaysia) and 1991 (The Association of Southeast Asian Nations (ASEAN) Cultural Park)</li> <li>Cultural activities, handicraft of originating state (interior), weekly cultural shows and traditional games.</li> <li>A place to experience Malaysia traditional architecture and heritage in one short at one place.</li> </ul>
	  <p>Source: <a href="https://twitter.com/melakanegeriku/status/613627817729724416">https://twitter.com/melakanegeriku/status/613627817729724416</a> and Author(2013)</p>	
NM2	Sarawak Cultural Village, Sarawak	<ul style="list-style-type: none"> <li>A basic model concept of Sarawak village.</li> <li>Exhibits replicas of the seven houses and cultures from multi-ethnic groups; Bidayuh, Iban, Orang Ulu and Melanau longhouse, Penan hut, Malay house and Chinese farm house.</li> <li>Known as a 'Living Museum' with 150 people living in the village, demonstrating traditional daily activities from Sarawak's diverse tribes.</li> <li>Traditional activities: multi-ethnic cultures and traditions shows and handicraft.</li> <li>The appreciation of Sarawak's culture amongst the youngest generation.</li> </ul>
	 <p>Source: <a href="http://rwmf.net/facts-on-rwmf/">http://rwmf.net/facts-on-rwmf/</a></p>	

Figure 3.6: Some examples of an open-air museum (OAM) in Malaysia

(Source: As indicated)

In the context of Malaysia, Mini Malaysia and the Cultural Park (NM1) and Sarawak Cultural Village (NM2) shared a similar characteristic with replicas of traditional buildings and experiencing the cultural heritage of the locals. NM2 is a unique living museum where all local heritage is exhibited and demonstrated by people who live in the village compound. This museum could be considered a successful approach taken by the Sarawakian to share their culture with visitors, especially to new generations.



For **NM1**, although it is a good attempt to replicate all types of TMHs at some point, there is a misunderstanding in the interpretation, especially when it came to constructing them in a modern way. Here, again, if these replicas do not correctly show the original design of the Malay architecture typical of each region, there is potential for visitors to misunderstand it, especially those people viewing a TMH for the first time. As the only one of its kind in Peninsular Malaysia, **M1** should at least exhibit all of the original traditional houses, as most of them face the threat of abandonment and demolition.

### **3.4.2 International Examples (Open Air Museums)**




With regard to the individual buildings (not vernacular), the relocation concept to other places were also applied. Some distinct examples are the Belle Tout lighthouse in Dover (moved 17 metres away in one piece due to coastal erosion in 1999); Trinity church in Edinburgh (was dismantled stone by stone elsewhere in 1872); churches in Romania like Mihai Voda (transported over 289m from the hill where they have been sitting for almost 400 years); the church of Santa Rita in Rome (was dismantled piece by piece and rebuild in the same place in 1940); and the relocation of Abu Simbel in Egypt (moved in 1968 from being flooded by the waters of the Nile).

Another famous example of the relocation concept or vernacular architecture on a bigger scale that was first established in Scandinavia in the 19<sup>th</sup> century prior to spreading throughout Europe and North America is the open-air museum (OAM). Relocation is an approach taken by most of the established OAM centres, such as Skansen, Sweden; Norsk Folkemusuem, Norway; Kulturen, Lund; Frilandsmuseet, Copenhagen; Hida Folk Village, Japan; Xinye Village, China and Taman Mini ‘Indonesia Indah’, Indonesia, etc.

Also known as the ‘musealization approach’, relocation to an OAM may be considered the most established and safe practice for safeguarding the vernacular architecture and showcasing old buildings (Orbasli 2008). Musealization allows people to explore the ‘exhibits’ from either their interiors or exteriors, in order to

experience in full the context and it's the building's history, architecture and materiality.

It also helps to build a close relationship between humans and their environment which adds to educational values. Besides this, it provides scientific values through the study of each house and the design of the musealisation project to collect and locate the houses. Figure 3.7 below provides an overview of various OAM approaches.

CODE	COLLECTION OF EXPERIENCES	
	INTERNATIONAL	
IM1	Norsk Folkemuseum, Oslo, Norway	<ul style="list-style-type: none"> <li>• Founded in 1894 by historian and librarian, Hans Aall</li> <li>• Norway's largest museum of cultural history</li> <li>• Consists of 160 buildings that represent different regions, period, town and social status from the Middle Ages (1500) to the 20<sup>th</sup> century.</li> <li>• The collections show how people lived in Norway.</li> <li>• The oldest Medieval Church (Gold Stave Church) was built in 1200 (13<sup>th</sup> Century) and re-erected in 1885.</li> <li>• The open-air museum was opened to the public in 1901.</li> </ul>
	 <p>Source: <a href="http://www.norskfolkemuseum.no/en/3korica/Set-2/The-Stave-Church/">http://www.norskfolkemuseum.no/en/3korica/Set-2/The-Stave-Church/</a></p>	
IM2	Skansen, Stockholm, Sweden	<ul style="list-style-type: none"> <li>• Founded in 1891 by Artur Hazelius (aims to live on in the museum)</li> <li>• He intended to bring the traditional rural culture to life.</li> <li>• Exhibits furnished houses and farmsteads, cultivated plots and gardens, animals.</li> <li>• 150 historic houses and farmstead have been relocated here.</li> <li>• The oldest building dated 14th century is a non-Swedish building of the Västveit Storehouse.</li> <li>• Various type of buildings that reflect different area (town quarter, industrial factories, allotments huts, village hall etc)</li> <li>• Live activities by historical interpreters wearing a period dress to help explain about traditional life in earlier times. They also demonstrate traditional activities like weaving, knitting, spinning and other crafts as well.</li> <li>• Claimed as the world's oldest open-air museum</li> </ul>
	 <p>Source: <a href="http://www.skansen.se/sites/default/files/gratiskartan_2012_eng_Bill_hemsidan.pdf">http://www.skansen.se/sites/default/files/gratiskartan_2012_eng_Bill_hemsidan.pdf</a></p>	
IM3	Kulturen, Lund, Sweden	<ul style="list-style-type: none"> <li>• Known as <i>Kulturhistoriska föreningen för södra Sverige</i>.</li> <li>• Sweden's second oldest open-air museum</li> <li>• Consists of the traditional museum with over 30 different buildings.</li> <li>• Built according to the pavilion system of the international exhibitions of the 19<sup>th</sup> Century.</li> <li>• Public were able to experience the historical setting that represents four estates; the nobility, the clergy, the burghers and the peasants.</li> <li>• The original has been extended to allow more building to move here.</li> <li>• A place where they save buildings that were to be demolished</li> <li>• The display also include stories of previous people of different social conditions and times in each particular house.</li> </ul>
	 <p>Source: <a href="http://www.kulturen.com/besoksinformation/welcome/">http://www.kulturen.com/besoksinformation/welcome/</a></p>	






IM4	<b>Hida Folk Village, Japan</b>  <p>Source: <a href="http://www.japan-guide.com/e/e5901.html">http://www.japan-guide.com/e/e5901.html</a></p> <ul style="list-style-type: none"> <li>• 30 old farmhouses moved from different parts of Hida region.</li> <li>• The structures range (100-500 years), thatched and shingled roof</li> <li>• Display daily tools and article (flashback old days file)</li> <li>• Keep the house in peaceful atmosphere by lighting the fire in the 'irori' (sunken hearths)</li> <li>• Handicraft Workshop</li> <li>• Also known as 'the village hidden in the leaf.'</li> </ul>
IM5	<b>Michinoku-Folklore Village, Japan</b>  <p>Source: <a href="https://www.japanhoppers.com/tohoku/kitakami/kanko/169/">https://www.japanhoppers.com/tohoku/kitakami/kanko/169/</a></p> <ul style="list-style-type: none"> <li>• 30 old farmhouses from different historical periods (Tohoku Region)</li> <li>• Layout arrangement (around the park amid forested walkways, ponds &amp; field)</li> <li>• Display various household item and tools for the visitor to experience traditional life.</li> </ul>
IM6	<b>The Nihon Minkaen, Japan</b>  <p>Source: <a href="http://www.nihonminkaen.jp/">http://www.nihonminkaen.jp/</a></p> <ul style="list-style-type: none"> <li>• 25 historic buildings from the Edo Period (1603-1867) from all over Japan were relocated to Kawasaki in 1965.</li> <li>• Layout arrangement (In five areas according to their original location).</li> <li>• Traditional handicraft activities</li> <li>• Tools and utensil are kept to recreate the past.</li> </ul>
IM7	<b>Xinye Village, China</b>  <p>Source: <a href="https://en.wikipedia.org/wiki/Xinye_Village">https://en.wikipedia.org/wiki/Xinye_Village</a></p> <ul style="list-style-type: none"> <li>• Founded in 1912 by Ye Kun during Southern Song Dynasty.</li> <li>• Historic Chinese village that also reflect the traditional idea of the culture of rural life.</li> <li>• Designated as a National Historic and Cultural Village of China.</li> <li>• Well-preserved 16 ancestral halls, ancient tower, ancient temples and 230 white-washed ancient residential buildings</li> </ul>
IM8	<b>Taman Mini 'Indonesia Indah', Indonesia</b>  <p>Source: <a href="https://en.wikipedia.org/wiki/Taman_Mini_Indonesia_Indah">https://en.wikipedia.org/wiki/Taman_Mini_Indonesia_Indah</a></p> <ul style="list-style-type: none"> <li>• Built in 1975.</li> <li>• Consist of Indonesian culture from 33 provinces including traditional architecture, clothing, dancing and traditions.</li> <li>• In the middle of the park, a miniature of Indonesia archipelago was created to show the all the provinces.</li> </ul>

Figure 3.7: Some international examples of an open-air museum (OAM)  
(Source: As indicated)

Firstly, most of the cases show the appreciation of vernacular architecture at the specific time at which they were created. Approaches are typological and on a regional basis, using houses that were conserved in this way from day one until now. Europe, as a pioneer in this field, can be considered as a foundation to support any intentions for the future of the NSTMH.

Comparing all OAMs internationally, they are quite well planned. The OAM movement started in the 1890s where the oldest OAM, in Skansen (**IM1**), Sweden, dates back to 1891. A vast collection of traditional buildings around the area consisting of 160 buildings (Norsk Folkemuseum – **IM2**), and 150 buildings for (**IM1**), demonstrates how serious they are in protecting and preserving their local vernacular heritage. These two OAMs are excellent examples of how to handle the musealization approach. From the conservation of fabric to the creation of pleasant and successful educational experience reflects the unique identity of the OAM. The context is also carefully reproduced which exhibits the correct information and sensibly displaced. The past environment was introduced again together with the activities to give a sense of place which links with the community.

The great efforts done by the past generation is acceptable whereby the younger generations are able to see clearly how the way of life in the past, including the architectural and cultural significance that they can learn about. Even the oldest medieval church, built in the 13<sup>th</sup> century, is still standing as a timber structure and has become the symbol for Norway's largest museum of cultural history. As most of the buildings were relocated from their original site, this approach has been accepted as one way of preserving the structures from obsolescence and ruin, as also happened in Kulturen, Lund (**IM3**) (Figure 3.8). Besides including exhibits illustrating the daily lives of people in the past at a certain area, the museums allow visitors to enjoy the experience by using the original tools (Figure 3.9).

#### The Blekinge Farmhouse

- Moved from Nybygden in Jämshög.
- Built in mid-18<sup>th</sup> century
- One of the best-preserved of the South Götland house type.
- Only the dwelling house and the stable were bought to Kulturen
- The characteristic technique of fit logs cut in half was used to save the timber.
- Renovated several times:
  - 1<sup>st</sup>: 1930s - The central part was dismantled and rebuilt with new timber
  - 2<sup>nd</sup>: 1995-96 - Total renovation
- A project was in progress to give training in old building techniques.
- The house shows how the farmer Carl Olson & family lived there (1815-1835)



#### The Berling House

- Moved in 1911 from Lilla Gråbrödersgatan in Lund.
- Built in end-18<sup>th</sup> century
- The oldest preserved timber-framed house in Lund.
- The brick patterns (windmills) were added here.

#### The Burgers' House

- Middle-class home of 16<sup>th</sup> to 20<sup>th</sup> century.
- Some of the characteristics of this house also can be found in Malmo city centre.



#### The Deanery House

- From Middle Ages. Archbishop's tomb dating from 1274.



#### The Bosmåla Croft

- A home from Småland around the end of the 18<sup>th</sup> century.
- Built in the 1850s
- Built with wood (low wall to save expensive timber)
- Built for poor people
- Roof thatched with birch-bark and turf
- Move to Kulturen in 1924
- To show how tenement soldier lived.



#### Västra Vrams vicarage

- 18<sup>th</sup> century.
- The new and old thatched roof was installed.



#### Hylla Smithy

- From the 18<sup>th</sup> century.
- Still in operation today



Figure 3.8: Various type of buildings relocated to Kulturen (M5) (Source: Author, 2015)





#### The Onsjö Cottage, Kulturen, Lund

- Built in 1714 (carved along with the owners initials SOS BMD)
- Moved from Jonstorp, Hallaröd Parish, Skane and was re-erected in 1927 at Kulturen
- Displayed at the Baltic Exhibition in Malmo in 1914
- Now (right wing clog workshop and left wing for children play area)

Figure 3.9: The Onsjö Cottage, Kulturen, Lund  
(Source: Author, 2015)

In the context of Asia, Japan may be considered as one of the successful countries in preserving their vernacular buildings through the application of this OAM approach. The OAM concept is not only about relocating many old farmhouses from different historical periods but also lighting up the fire called ‘irori’ (sunken hearths), to keep the house life in a peaceful atmosphere. It is a good way to maintain the original environment, as happened in the case of Hida Folk Village (**IM4**). Often all the traditional tools and utensils were kept to recreate the real life experience as in Michinoku-Folklore Village (**IM5**) and The Nihon Minkaen (**IM6**).

In a similar context, a different experience and character of the architecture of ancient white-washed residential buildings can be seen in Xinye Village (**IM7**), China, reflecting a preserved traditional way of rural life. The original setting is still there. Designated as a National Historic and Cultural Village of China, it has the scope to expose younger generations to, and educate them in, the evolution of their existence since 1912. In contrast, the Taman Mini Indonesia Indah (**IM8**) is a similar type to **NM1**, where there are 33 buildings exhibited, representing the country’s provinces. It has a special landmark in the form of a miniature ‘Indonesian archipelago’ map in the main central lake.

Foruzanmehr and Vellinga (2011) highlighted that to ensure the long-term viability of vernacular buildings, some of these factors (environmental, social, cultural and economic) need to be taken into consideration to ensure their continuity and balance in order to acquire better understanding of the conditions required for the survival of vernacular traditions. An integrated, holistic and localised approach was

also highlighted to recognise the context of their traditions and sustainability challenges with regard to their adaptation to a new function as well as an OAM. This type of approach can facilitate the discovery of meaningful lessons from the past.

As highlighted by Williams (2007), there are also challenges facing the existence of OAMs, such as globalisation, multiculturalism, diversity and sustainability, that could potentially be transformed into opportunities. In addition, for example, as suggested by Rentzhoq (2007), merely creating a nostalgia for the past is not enough to attract younger generations to museums. They instead have to offer additional forms of experience that go beyond normal museums. The ability to participate in past activities at an OAM within their original setting and environment, and constantly reinvented throughout their history, helps to promote participation and foster understanding between groups of all ages and cultural backgrounds (Williams, 2007).

Apart from OAMs, adaptive reuse is also beginning to garner widespread attention due to the economic, social and environmental benefits offered, hopefully making a positive contribution to sustainability (Bullen and Love, 2011; Yung et al., 2012). According to the Burra Charter (2013), adaptive reuse or adaptation means ‘changing a place to suit the existing use or a proposed use’ (p. 2). It is also a process that changes the original function in order for it to be used for different purposes, and involves minimal impact on the heritage significance of the building and its setting. Adaptive reuse can be separated from sustainability as it reflects local life and maintains local identity, diversity and vitality in the historic environment with regard to the sense of place among local communities that have powerful connections to their physical settings (Bullen and Love, 2011). The authors also highlighted that this approach also has an impact on economic viability in terms of the costs and benefits that are factored in over the life of the building. Many scholars agree that any preservation of heritage buildings has an impact on community well-being and the sense of place.

Ellison et al. (2007), in Bullen and Love (2011), suggested that the costs of refurbishing a building to meet the standards needed to make a positive contribution to sustainability ‘may be 12% more expensive than a standard reuse project’ (p. 33).

Kohler and Yang (2007), in Bullen and Love (2011), highlighted that ‘the costs of reusing buildings can be lower than the equivalent cost of demolition and redevelopment’ (p. 33).

Although claimed as one of the best approaches, adaptive reuse can be a costly experience for developers and owners due to the heritage and conservation requirements or planning and building regulations that might restrict their functioning (Bullen and Love, 2011). Many scholars have noted that adaptive reuse has the potential to reduce energy consumption and contribute to sustainability, to prolong building life. Sometimes, an adapted building may not completely match a new building in terms of performance, and indeed may be uneconomical, particularly if used as a commercial building, but any shortfall should be balanced against gains in social value (Bullen and Love, 2011). Furthermore, the authors claimed that adaptive reuse offers a more effective process of dealing with buildings than demolition. It also has a more favourable impact in terms of sustainability and significantly reduces whole-life costs and waste and leads to improved building functionality.

Sometimes, adaptive reuse can also be threatened by poorly designed adaptations and mitigation responses (Yung et al., 2012). One of the major challenges associated with the adaptive reuse of historic buildings is how to balance their cultural significance and economic viability. It is also essential to ensure the compatibility and appropriateness of its potential uses with minimal interference with the fabric.

All of these collections and experiences of relocation, OAM and adaptive reuse, as outlined above, may be considered appropriate for adaptation to the NSTMH context where relevant. The way in which a TMH is preserved depends greatly on its setting, place and environment, with the weather and climate being notable factors. The main concern here is how these approaches would be accepted by people in Malaysia, particularly in Negeri Sembilan. It may be the case that people’s perceptions need to change as they may be lacking in the required levels of knowledge and sensitivity, something that has been a factor in the damage caused to many relocated TMHs. People here have often misinterpreted this and thus their perception needs to be changed first prior to further action being taken, in order to protect and preserve the NSTMH in the context of the OAM approach. One other important thing to consider



is how to manage the OAM on a suitable (sustainable) scale in addition to the amount of maintenance required.

Although OAM or adaptive reuse was agreed upon by scholars like Vellinga, Bullen, and Williams as the best way to protect vernacular architecture, in this case the NSTMH, ‘the question of whose values are being expressed arises in the process, hence the dichotomy between the social construction of traditional realities by those who live in them and the academic representation of those realities by those who study them’ (Bourdier & Alsayyad, 1989, p. 9).

Vellinga (2014) makes a salient point in asking, ‘why do people so often want to leave behind if the life was really that good in the past’ (p. 5). Further investigation will be carried out.

### **3.5 Chapter Summary**

This chapter has provided an overview of the literature from an international context of conservation experiences in mapping the theoretical framework of this research. Some key points were highlighted including a comprehensive understanding of the buildings and its environment. From planning to the implementation process should be well executed especially managing change which goes beyond the day to day maintenance by the community, in this case, is the house owner of the NSTMH.

Also, in the context of OAM, the conservation of fabric and the creation of pleasant with successful educational experience reflects its unique identity to give the sense of place. The relocation concept is possible to ensure its survival depends on how far it been managed and accepted by the community. Adaptive reuse is also one method that has the potential to be adapted in the NSTMH context, and where further strategy needs to be explored in order to determine a suitable form of usage that generates minimal disturbance to the original fabric.

Both chapters have reviewed empirical evidence in both a local and international context. Although they tackle the issue from different angles, they nevertheless provide an illustration of the interconnected themes. The first themes

focused on the built form of the TMH, and the NSTMH in particular, notably the challenges surrounding them and their importance from a conservation perspective. The overall picture of conservation practice was also examined not only in Negeri Sembilan but also more widely in Malaysia and within the international context of conservation principles, thus highlighting the importance of a holistic management approach that should be tackled collectively. The dynamic nature of building traditions and their meanings is the key to restoring this particular heritage.

Each theme has its own gap but each somehow interweaves around the others. This therefore leads to the mapping of the theoretical framework of this research. Above all, all of the literature has highlighted that there may be a theoretical basis within any of the approaches selected to preserving the built heritage environment and that there is a need to consider the impacts on cultural aspects, community well-being, the sense of place and environmental benefits, as highlighted by Vellinga (2007), Yung et al. (2012) and Bullen and Love (2011). A stronger sense of connection with the physical environment is one of the factors that is related through the visuality and intrigue offered by heritage buildings.

The next chapter will explain the methodology used to research these aspects in the context of TMH in Negeri Sembilan.

## CHAPTER 4

### RESEARCH METHODOLOGY

#### 4.1 Introduction

This section presents the research methodology – a qualitative approach – and elaborates on the proposed method for conducting the data collection and its analysis. A multi-method approach was adopted towards establishing a framework of conservation principles for the Negeri Sembilan Traditional Malay House (NSTMH). The research methodology chapter is structured through an overview of qualitative research approach; overview of data collection methods focuses on the semi-structured interview of the house owners and the experts; on-site building observation as well as documents review. An overview method of analysis was explained using thematic analysis (interviews), analysis using a model of cultural heritage (on-site observation) and template analysis (documents review). The issues of trustworthiness of the research also were highlighted together with the ethical review.

#### 4.2 Overview of Qualitative Research Approach

According to Silverman, (1993), qualitative research is the opposite of quantitative methods, avoiding any statistical techniques and providing a deeper understanding of the social phenomena. Huberman and Miles (1983) asserted that '*Qualitative research can be even more rigorous than correlational and experimental studies*' (p. 281).

Bloomberg and Volpe (2012) also highlighted that qualitative research implies and is more suited to finding a deep understanding, exploration, discovery and description of a social setting from their perspectives. It can also be applied to describe a current condition that relates to cause-effect phenomena.

As claimed by Miles and Huberman (1994), '*a qualitative strategy is appropriate for exploring exotic cultures, understudied phenomena and very complex social realities*'. A qualitative strategy also allows exploration of new issues given via reflection on people in their real world (Bryman, 2012). In this work, a qualitative strategy was applied in gathering house owners' and experts' views about the challenges in the conservation of the NSTMH as this kind of approach allows for a broad range of possibilities and variation in the findings. This strategy is necessary to explore in depth how they understood the context of their built environment and its natural setting.

The principle of inductive approach was adopted in order to obtain richer data and information that could be examined from all aspects (interview, observation and document review) towards conserving the NSTMH. These processes generate the research question inductively by interpreting and developing meanings from the data collected rather than beginning with the theory, as is the case in positivism (Bloomberg and Volpe, 2012). Also, this process sometimes involves holistic and complex ideas requiring multiple methods with different assumptions, inquiry and interpretive paradigms (Bloomberg and Volpe, 2012).

According to Bryman (2012), qualitative researchers could subscribe to any of these research strategies through either inductivism, constructivism or interpretivism. Besides that, the reality is socially, culturally and historically constructed which has an influence on the researcher and the study context (Lincoln and Guba, 1985). Furthermore, in this research, I was actively involved in understanding the various realities of the state of conservation of the NSTMH. As it is based more on social interpretation, this approach allowed me to adopt and understand the experience from an insider point of view. It also permits a flexible stance that may be altered according to the reflection of personal perspective and sometimes acknowledges the personal values. As supported by Bloomberg and Volpe (2012), it develops from the individual's personal experience with multiple meanings as well.

According to Yin (2009) and Bloomberg and Volpe (2012), data collection is an extensive process involving multiple methods that include interviews, observation, document review, focus groups, surveys and critical incidents. This research employs

a holistic multi-method approach to explore the challenges in the conservation of the NSTMH from the perspective of the house owners and experts, examining the changing patterns of form, fabric and function of the NSTMH through on-site observations as well as reviewing all related local, national and international heritage legislation. These approaches were aimed at establishing a previously unexplored framework of conservation principles for the NSTMH.

As an exploratory inductive approach, the research is more about a generated idea than one that is tested, as in quantitative studies. It is not rigid and fixed but rather permits more open exploration in an emergent context. Purposive sampling was used with specific samples of participants and numbers of NSTMHs. Real-world situations were explored through the interviews with house owners and experts, and about the changing pattern of the form, fabric and function of the NSTMHs as they naturally unfold. All the interviews and observations were carried out within the natural context of the place. These multi-methods were combined for the purpose of data triangulation prior to developing principles for the conservation framework.

Figure 4.1 below illustrates the research process outlining the overall research methodology framework.

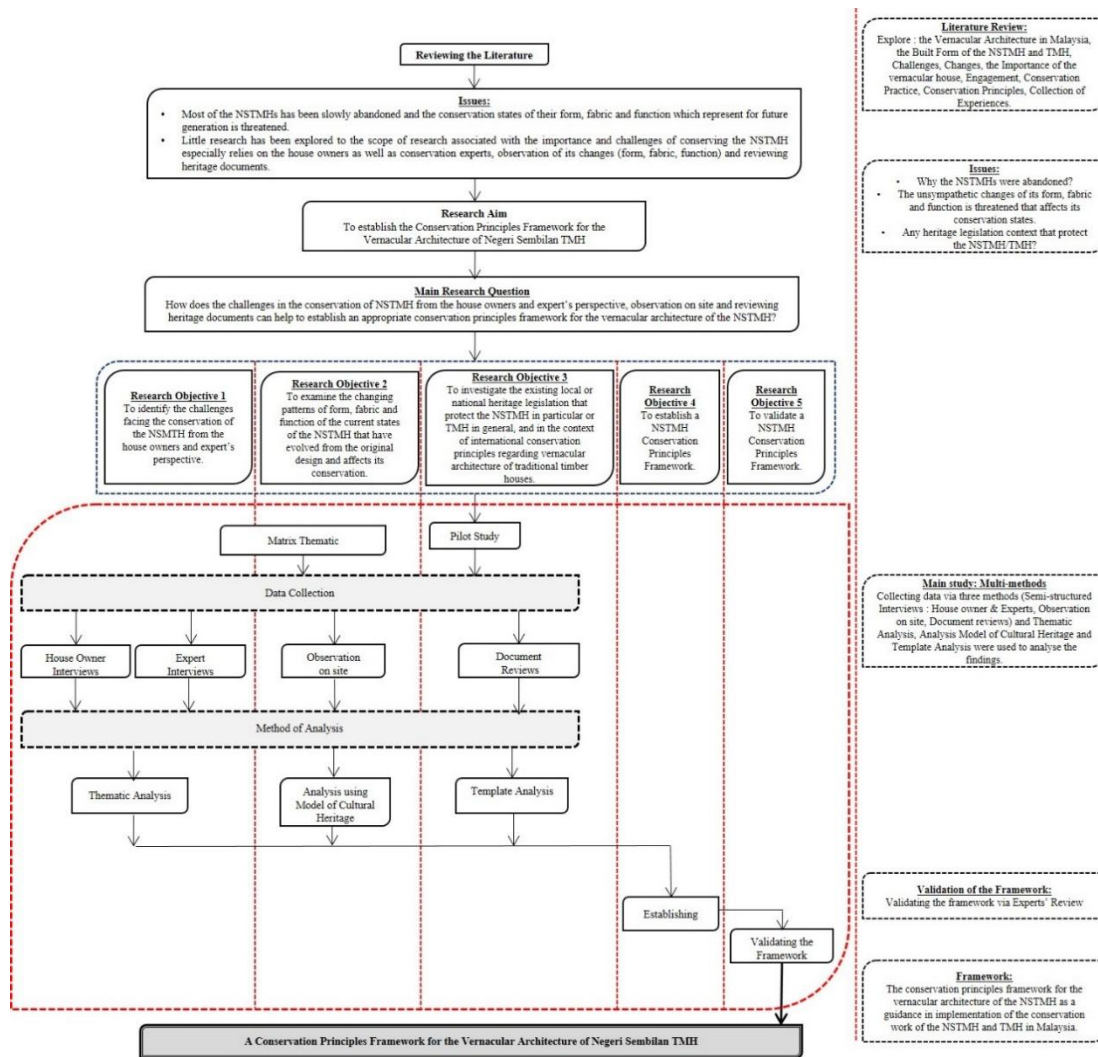


Figure 4.1: The Research Process in Establishing a Conservation Principles Framework for the NSTMH.

### 4.3 Multi-methods

A multi-methods approach was employed in this research as a combination of more than one methods such as observation, text and documents review), interview and audio and video recording (Silverman, 1993). This research has research objectives that involve a form of triangulation. For instance, to achieve the first research objectives (RO1), interview was used as the main method to identify the challenges in the conservation of the NSTMH from the perspective of the house owners and conservation experts. Secondly, for the second research objective (RO2), on-site

observation was chosen to examine the changing patterns of the form, fabric and function of the NSTMH from the original measured drawings design of the then state of their condition and how this affected the conservation. Thirdly, the third research objective (RO3) was to investigate suitable heritage documents related to local and national built heritage that may be used for the protection of the NSTMH or TMH, in addition to an international context of conservation principles, charters and guidelines in vernacular timber architecture.

These methods were used as a basis to develop a conservation principles framework for the vernacular architecture of the NSTMH. In order to establish a final framework, the initial framework needs to be validated by experts in the conservation field. According to Silverman (1993), by using multiple methods, the data are drawn within the ‘actual’ state of affairs that intersect with each other. As shown in Figure 4.1, the multi-methods employed in this study were explained further below.

#### **4.3.1 Semi-Structured Interview**

In qualitative research, the interview technique is widely employed within the social science context, and is the most common method used to gather data through active interaction between researcher and respondent (Bryman, 2012; King, 2004). It is also the best way to gather information, particularly on people’s experiences, perceptions, attitudes, meanings, patterns and forms of behaviour (Bryman, 2012; Elliot et al., 2011; Polkinghorne, 2005). Silverman (2013) also asserted that interview is one way in which participants can be helped to describe the external reality of the facts or their internal experience (feelings and meanings). Data gathering is important in qualitative research as they provide evidence for the human experience investigated (Polkinghorne, 2005).

On the other hand, a semi-structured interview or an ‘interview guide’ (Bryman, 2012) is a series of listed questions that cover a broad range of subject matter and is used when the researcher already has some thoughts about the research topic (Elliot et al., 2011). Although listed questions were used as guidance in this research, the researcher was also able to ask impromptu questions tailored to the replies given

by respondents, thus allowing a degree of flexibility to emerge during the course of the interviews (Bryman, 2012). An interview guide was derived from the scope of the work to help the researcher to control and focus on the needs of the research objectives. (Bryman, 2012). For instance, the interview guide for this research was focused on the challenges facing the house owners and experts in conserving the NSTMH. According to Bryman (2012) it is more helpful for the researcher to be flexible with his questions and adapt to the flow of the conversation. The style of questioning and the way the interviews are driven play an essential part in the overall success of this process.

A semi-structured interview rather than a postal questionnaire approach was also utilised in this research due to the purposive sampling of respondents – owners of the long roof type of the NSTMH and experts involved in the conservation of the TMH. A large sample was not suited to this research context as it focuses only on selected respondents directly linked to the conservation of the TMH in particular. Although there might be more than ten thousand TMHs throughout Malaysia as explained in Chapter 2, section 2.3.1, I focused specifically onto the KALAM documentation which I narrowed to certain criteria and specific typology of the NSTMH to achieve the research objectives. The documentation helped me to investigate all the architectural and historical background of the houses as well as guidance to survey the buildings. The semi-structured interview method was chosen as the primary method of collecting data as it offered the best way to explore the perceptions of house owners and experts towards the protection and conservation of the NSTMH.

Snowball sampling was also used in the process of gathering data through interviews, to establish further contacts with others (Bryman, 2012), and this was especially true for the experts. According to Bryman (2012), snowball sampling is ‘a sampling technique in which the researcher samples initially a small group of people relevant to the research questions, and these sampled participants propose other participants who have had the experience or characteristics relevant to the research’. (p.424). It is quite difficult to find experts directly involved in the conservation of the vernacular architecture of the NSTMH or even the TMH. Some may have been indirectly involved in planning, managing and researching in the context of built heritage environment in general.



According to Stubbs (2009), these respondents are among the participants who were involved in architectural conservation, as shown in Figure 4.2. Speaking to them directly offers greater credibility and provides a precise explanation, because they are the ones directly involved in the issues of conservation of the TMH.

Based on the pilot study carried out in autumn 2013, the interviews lasted for between 30 minutes and 2 hours, depending on the particular situation and how the issues were discussed (De Clerck et al., 2011). But in the real fieldwork, some of the interviews, especially those with the experts, lasted for up to 4 hours. Whether or not these experts were providing direct answers to the questions, it was quite difficult to stop them from giving and sharing their valuable experience. Towards the end, however, not all of the information provided by them proved to be useful. A selective approach is required in order to answer the research question. Added to that, according to Bryman (2012), the researcher should have a greater interest in looking beyond what people actually say, and looking for additional meaning, especially in the way they say it. Further evidence was gathered if the experts were willing to share their experiences. All the data gathered from the pilot study acted as the basis, and from there the interview guides were validated for further detailed analysis and guidance before the primary fieldwork was carried out in the summer of 2014.

PARTICIPANTS IN ARCHITECTURAL CONSERVATION	
NO.	
<b>A</b>	<b>DIRECT INFLUENCES</b>
1.	<b>Owners</b>
	Private-individual, partnership, corporate
	Public-national, state, local
	QUANGO-national, regional, or local trusts
	NGO-building trust, foundation, or non-for-profit
2.	<b>User/Occupants</b>
	Residents-24 hour inhabitants
	Daily workers-office workers
	Occasional users-visitors, sightseeing public
3.	<b>Operators/Managers</b>
	Property manager (custodian) & staff
	Chief curator & staff (collections caretakers & presenters)
	House architect or engineer
	Security personnel-(for users, public, collections, & site)
	Maintenance personnel
<b>B</b>	<b>LESS DIRECT INFLUENCED</b>
1.	<b>Official bodies having purview</b>
	Building code regulators-Local, state, national
	National, state, and/or local conservation agencies
2.	<b>Support groups</b>
	Advocates, NGOs, friends groups
	Tenant associations
	Local donors
	Interested public
	Interested international constituencies
3.	<b>Others</b>
	Lenders
	Financial Institutions
	Insurers
<b>C</b>	<b>OCCASIONAL INFLUENCES/ INTERVENERS</b>
1.	<b>Technical Assistance (as required)</b>
	Conservation architect
	Engineer
	Specialty consultants
	(conservators, exhibition designers, etc.)
	Cyclical maintenance services

Figure 4.2: Participants in architectural conservation  
Source: Stubbs (2009)

## The House Owners

Owners of NSTMHs constructed 100 or more years ago were chosen as they were expected to have the closest links to this heritage and a unique understanding, able to answer questions such as '*How to deal with the conservation of the house?*' or '*Is it about the maintenance aspect only?*'. These questions led to further exploration to uncover the challenges in preserving the house besides the ultimate abandonment. The house owners were selected to represent their houses because they give a deeper dimension of the history and engagement with the fabric that reflects the unique cultural heritage state of matrilineal system of *Adat Perpatih*. It was advantageous if they were familiar with the historical and architectural background of the house, but the priority was to speak directly with house owners still living in their traditional house which the fieldwork shows is not the norm. Various reasons for this were gathered as part of the fieldwork, and the type of house owners were identified and categorised into four groups, as follows:

- a) Resident house owners
- b) Resident caretakers
- c) Non-resident house owners with a non-resident caretaker
- d) Abandoned

Although 43 houses were listed from the KALAM database initially, in the end, the following cases were excluded from the study: house owners who could not be traced, including their heirs (abandoned houses); and the house could not be located based on the location plan and map used by KALAM. This left a total of 18 owners of NSTMHs to participate in the research.

It was beneficial to interview them, to find out about their understanding and the challenges and importance of preserving heritage buildings. In order to make the data collection more reliable, it was necessary to undertake on-site visual observation of the owners' houses. The survey was also used to triangulate the data gathered from the interviews to identify the changing patterns of the form, fabric and function made to the NSTMHs.

All the background information on the houses in question was available from the measured drawing reports from the Center for the Study of the Built Environment in the Malay World (KALAM).

The most challenging element was to approach and gain the owners' permission to access their houses and conduct interviews with them. Some of the owners were very wary of allowing me to use their house for research. Although a brief introduction of the research intention was given prior to the interview, the owners would not allow any strangers or outside people to enter their houses for reasons of security and safety. Most of them were older people living alone. In order to help ease the process, my mother willingly participated as an assistant, accompanying me and helping to convince the owners of the authenticity of my research. All of the owners were around the same age as her. Although this strategy proved successful, it was subject to the availability of my mother. Weekends were usually the best times to approach the owners as most of them were available at these times.

There were occasions when the houses could not be found, despite being in the right area. When the house was found, most had already been abandoned, demolished and no contact could be made with their owners, not even their heirs. Due to the scattered locations of all the houses, a strategic plan of action was required for the journeys to the potential locations of the houses.

As accessing most of the NSTMHs entailed journeys of between 40 and 90 minutes (each way), it was decided that a minimum of one house per day should be accessible for both an interview and observation at the same time prior to returning home and repeating the process the following day, as required. The plan was developed by incorporating the interview schedule with the experts as well. Action was taken to seize any opportunity that arose on the day. If an expert cancelled an appointment, for example, then we immediately turned to the back-up plan of finding an alternative house that was in the list as the houses were quite far apart, depending on the location.

The interviews were conducted following permission from the house owners to access their properties. Often they were carried out in their houses, but also their siblings' house or in an alternative location that suited them. During the interviews,

the drawing (plan and elevation) of the house was used to prompt the interviewee into remembering important points about what has happened in the past (Bryman, 2012). It also helped to clarify certain issues by providing a meaningful and relevant context. As mentioned before, an interview guide was validated and revised from the pilot study previously carried out.

Furthermore, a digital voice recorder was used to record all the information from the conversation during the interviews and provide a more detailed record than making field notes alone. The survey was conducted by taking photographs which reflected the condition of the house and close-up details of specific changes to the original form along with some interesting features. Furthermore, a digital video camera was also used as a backup to capture evidence on site.

The data collected from the interviews with the house owners were transcribed and analysed through thematic analysis, as discussed in Chapter 5.

### **The Conservation Experts**

Another important element in this research is the semi-structured interviews with experts in conservation works in regard to the NSTMH or the TMH more generally, unfortunately there are not many conservation experts in this field. This included not only practitioners but also academics, officials (for example, local authorities, heritage officer, museum), conservators, architects, timber experts and even the *Ketua Kampung* (head of the village) in order to gain greater understanding into the context.

About 25 experts were involved in this research (detailed description in Chapter 5, section 5.4), Officials from government agencies came from *Federal level*– National Heritage Department of Malaysia; *State* – State Government of Negeri Sembilan, Negeri Sembilan Museum, Seremban Municipal Council; *District* – District Officer of Kuala Pilah. Other experts came from the Melaka Museum (PERZIM), the KALAM or other academics (Universiti Teknologi Malaysia, Universiti Putra Malaysia, Universiti Kebangsaan Malaysia, Universiti Sains Malaysia and Polytechnic Port Dickson). Finally, timber experts from the Forest Research Institute of Malaysia

(FRIM) and professional architects, conservators and contractors were approached. Some of these experts were also consulted for the validation stage of the conservation principles framework.

Prior to the main fieldwork in the summer of 2014, all of the experts were contacted in advance from the UK. A snowball sampling concept was applied in this context, whereby other experts were suggested by the experts during the interviews that were carried out.

Interviews with the experts were conducted in their respective offices, in locations like Negeri Sembilan, Melaka, Johor, Selangor and Kuala Lumpur. The interview guide used with the experts was different to that used with the house owners. Some of the topics covered included the challenges in the conservation of the TMH, working experience and the legislation context. Various ideas, perceptions and understandings of the issues surrounding conservation of TMHs were gathered during the interview process.

As limited experts were involved in conservation of the NSTMH, with limited budgets and time frames available, this contributed to the choice of relevant and suitable experts that were able to provide insightful knowledge for this study. Careful selection of respondents was crucial to the adoption of an appropriate research strategy for this study. Hence, the research process, including the data collection techniques, sample size and data analysis, was planned in advance. This approach is suitable, valid and contributes to the social research (Bryman, 2012).

The time limitation (less than three months) affected the flow of the research processes, especially since the process of data collection proved to be quite challenging during the fasting month of Ramadhan and the festive month of Eid Mubarak 2014. In addition to this, the researcher was bonded to a government scholarship that permitted a window for data collection of a maximum of three months, which was also a contributory factor to the challenge of completing the data collection.

#### 4.3.2 On-site Building Observation

Historic 19<sup>th</sup>-century long roof-type of NSTMHs were identified as purposive sampling. Why this type of house? The reason is because the NSTMH is a unique cultural heritage that represents one of the most significant traditional architectures in Malaysia due to its dominant and unique form of a curved roof at both ends. NSTMHs aged 100 years or more offered the most intricate designs in terms of their embellishments (e.g. carvings, motives, techniques) and techniques of construction that were reflected by the highly skilled craftsmanship of the *Tukang*. These NSTMHs also reflect the matrilineal social system of *Adat Perpatih* that is still practised to this day. Besides this, the very survival of this vernacular architecture is threatened by rapid modernisation, urbanisation, socioeconomic transformation, loss of characteristic due to changes, development and misinterpretation of its typology as well as serious issues of abandonment and obsolescence.

Observation is a method recommended to understand another culture similar to anthropological studies where deeper inner experiences were explored in the forms of social interaction (Silverman, 1993). It also accompanies the drawings made to aid the answering or reflection on the question been asked. Visual methods were also made for the *in-situ* assessment (Giggio et al., 2015) like on-the-spot sketches to get impromptu and initial ideas about the condition of the house being observed (Taussig, 2011). The observations revealed the current condition of the houses, especially with regard to changes made to their form, fabric and function. The photos also assisted in analysing the textures of the house fabric, with a reflection of the true colours of the existing conditions, the proportions and scale of the houses.

The measured drawings of the NSTMHs were an important tool for this study. It is imperative to have these to understand the historical background, age of the house, ownership, architectural evolution (changes), location, design layout (form, fabric and function) and the appearance (elevations) and construction detail of the house. Most of the drawings give essential information either through the front elevation (2D) and the isometric view (3D) of the house.

The first observation was carried out using the existing drawing (images) published at the KALAM website (not to scale and no dimension), which provided an understandable perspective. Through this raw image, it was possible to identify whether or not the house form was of a long roof type and what materials were used. A rough idea of the plan of the layouts was also provided. It was not possible to analyse any extensions or subsequent phases, due to a lack of information gathered at this initial stage. Additionally, the dimensions of the house could be just predicted, based on the overall proportions of the house. Only parts of extensions could be clearly identified, through their characteristics. It was also possible to determine the social status of the house owner, based on a rough overall interpretation of the house. The fieldwork was carried out to acquire a clearer understanding of the site.

A pilot study was conducted from October until November, 2013, to find potential cases worthy of pursuing in depth or not especially for the preparation of the main study. The pilot study is a small experimental task to test and reveal deficiencies in information (Altman et al., 2006) and to determine the adequacy of the research instruments (Van Teijlingen et al., 2001).

The semi-structured interviews and on-site observations highlighted suitable methods for this research. These methods were successfully conducted in gaining the information regarding the research needs. Although many challenges were faced, this procedure provides a clear direction and encouragement to proceed with the same methods for the main study. Further investigation was carried out during the main fieldwork in Summer 2014 to enrich the data collection in order to achieve the research aim and objectives.

Based on the pilot study undertaken, some misinterpretations from earlier drawings were clarified, and the overall architecture of the house could be fully understood. It was important to do a rough sketch of the changes made, especially to the layout plan, as photographs only help to visualise the size of a particular space within a frame. Although not ideal and perfect, this process did help to record things of interest on the site for easy understanding. Not all the measured drawings were reliable as they had not always been updated to reflect the current state of the buildings.

These were all challenges that needed to be taken into consideration as part of the real fieldwork.

During the pilot study and main fieldwork, observations on other case studies were also carried out at various places to get an overall picture regarding conservation efforts related to the TMHs, such as those of *Mini Malaysia*, *Perkampungan Hang Tuah* and *Kampung Morten* (Melaka), *Teratak Zaaba*, Rembau Museum and Negeri Sembilan Museum (Negeri Sembilan) and the Malay Heritage Museum (Universiti Putra Malaysia, Selangor).

During the observation, I was looking into the patterns of changes that had been made to the condition of the houses (i.e. to their original designs), especially with regard to changes in the form, fabric and function of the houses affecting their conservation. These changes were observed in the three main typologies of the NSTMH, that is, the *Serambi*, *Rumah Ibu* and *Rumah Dapur*, as further discussed in Chapter 6, highlighting misunderstandings of the basic form, layout and function of the houses' original designs. The interpretive schematic sketches of the building surveys (Figure 4.3) were analysed using Matero's concept model of cultural heritage (2006) to identify the patterns of alterations, in order to achieve the second objective of the research.





### 4.3.3 Document Review

Similar to the drawings, document reviews began firstly with the collection of data from the information gathered at the Center for the Study of Built Environment in the Malay World (KALAM), by determining suitable 19<sup>th</sup>-century historic houses. On top of scholarly articles which have been published on TMHs, KALAM has long been analysing and collecting the information and presenting through its database. Their academic role becomes evident.

The centre of the KALAM is the only place where coherent documentation about these houses are gathered, and this is done in formal terms. However, the documentation was done only once, and never updated. Hence it has no dimension. The documents relatively served as an academic documentation and a good point of reference, but more information on preservation are needed for this study. It is important for this research to update all of this information for the scope of the thesis and transforms into a format that tells us more things. The challenges in the conservation of the NSTMH might entails maintenance and the role of the house owner. Therefore, I need to update all those information by reviewing the documentation, interviews and building surveys.

This data collection was carried out during the preliminary study of autumn 2013: architectural report and measured drawings of the particular traditional houses selected. Further data, such as when the house was built, who the owners are, the long roof-type houses, the chronological changes of the house from the original design and the locations of the houses, were also collected and analysed. The drawing of the site plan was an important document to help in locating the houses through maps and plans, although some of them proved difficult to trace due to the limitation of the information in the drawings. According to the interview with the Director of KALAM (held on 07/11/2013), all the documentation on the TMH, particularly in the Negeri Sembilan region, can be found in the collection area, but this depends on the availability of the documents. The lack of information and unavailability of documentation were factors which affected when the survey was carried out. In the end, about 43 of the NSTMHs were filtered and selected for further investigation based on the research needs. Out of these 43, a total of 17 houses were covered and observed during the preliminary phase,

and the balance of the observations were carried out in summer 2014 as part of the real fieldwork.

In the second part, the investigation of the existing heritage legislation and conservation principles (locally and internationally) regarding timber structures, particularly in the Malaysia and Negeri Sembilan context, were explored. The local and national heritage legislation and guidelines were reviewed to investigate whether or not the NSTMH in particular or the TMH in general were protected. International conservation charters and principles were also reviewed in order to obtain a macro perspective of the protection and conservation of vernacular architecture in general, as discussed in detail in Chapter 6. The documents in question were found mostly online.

Furthermore, document reviews were also carried at the National Archive Centre, Kuala Lumpur, *Badan Warisan Malaysia* (The Heritage of Malaysia Trust), as well as at the Negeri Sembilan Museum, in order to find out more about the TMHs, as overall resources were very limited. As a result, not much in the way of useful data was gathered because of an insufficiency of documents regarding the NSTMH, TMH and also vernacular architecture.

This method will be analysed using template analysis, as discussed in Chapter 6. All the reviewed documents will further add to achieving the third and fourth objectives of the research.

#### **4.4 The Analysis Flow of the Research**

The NSTMH conservation framework was developed based on discussion and triangulation of the findings from the literature review and the multi-methods used (interviews with house owners and experts, on-site observation and document reviews). Therefore, in order to establish the conservation framework, it is essential to understand the flow of the research, as outlined below in Figure 4.4.

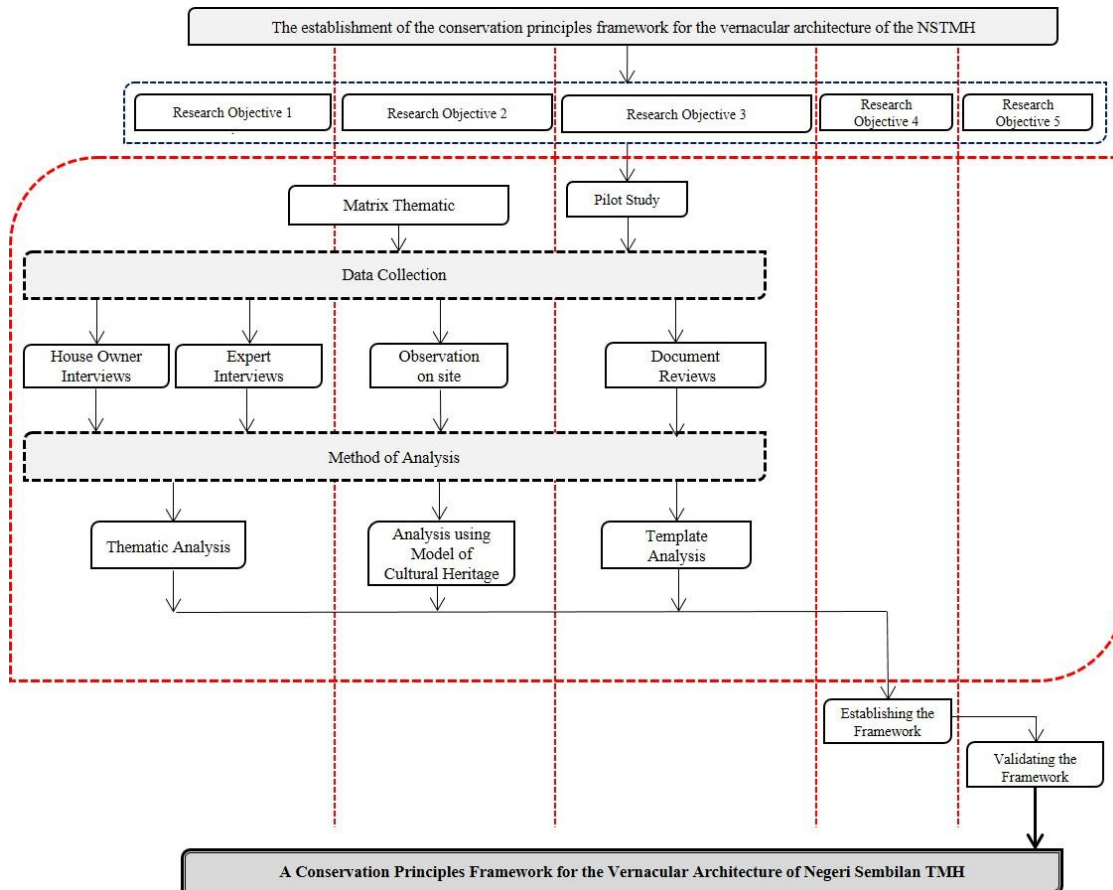


Figure 4.4: The analysis of the research flow

In this research, a thematic matrix has been used to demonstrate various research elements involving the respondents (house owners, experts), observation of the changing patterns of the NSTMHs, as well as the reviewed heritage documents (national/local) and conservation principles/charters (international). The matrix was additionally applied to achieve the research objectives

These research elements were explained in Table 4.1

Table 4.1: The research elements.

House Owner Interviews (16 nos.)		Expert Interviews (25 nos.)		Observations (25 nos were surveyed, 17 nos were observed)		Document Reviews (19 nos.)						
Code		Code		All NSTMHs	Code	Local (State): (6 nos.)		Code	National (Federal): (5 nos.)	Code	International (8 nos.)	Code
Resident house owners	A.	Resident house owners		A.	Acts:		Enactments:		Charters/Principles/Policy			
Rumah Dato' Laksemahana Hajjah Bogdad	HA1	Architect/ Heritage Conservation Committee- Malaysian Institute of Architects	E1	Rumah Dato' Laksemahana Hajjah Bogdad	HA1	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988	L1	National Heritage Act 2005 (Act 645)	N1	Charter on the Built Vernacular Heritage (1999)		
Rumah Hajjah Maharan Jonad	HA2	Architect/ ICOMOS Committee Member/ Heritage Conservation Committee- Malaysian Institute of Architects	E2	Rumah Hajjah Maharan Jonad	HA2	Johore Enactment 1988	L2	Local Government Act 1976 (Act 171)	N2	The Principles for the Preservation of Historic Timber Structure (1999), or the ICOMOS International Wood Charter		
Rumah Uwan Zunah	HA3	Conservation Architect (Melaka)	E3	Rumah Uwan Zunah	HA3	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	L3	Town and Country Planning Act 1976 (Act 172)	N3	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)		
Rumah Dato' Sidin	HA4	Architect ICOMOS Committee Member/ Heritage Conservation Committee- Malaysian Institute of Architects	E4	Rumah Dato' Sidin	HA4	Sarawak Cultural Heritage Ordinance 1993	L4	Federal Territory Act 1982 (Act 267), and are only in Kuala Lumpur, Labuan and Putrajaya	N4	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)		
Rumah Hajjah Rafeah Mohd Yusuf	HA5	Academic (Universiti Putra Malaysia (UPM) / Director of Malay Heritage Museum) - non architectural background	E5	Rumah Hajjah Rafeah Mohd Yusuf	HA5	State of Penang Heritage Bill 2011 ( <i>Warisan Kerajaan Negeri Pulau Pinang 2011</i> )	L5				ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	
Rumah Pesaka Puan Hasnah Hitam	HA6	Architect/ Academic (Universiti Kebangsaan Malaysia) - Empayar Perunding Multi-Discipline Consultant	E6	Rumah Pesaka Puan Hasnah Hitam	HA6	Guidelines:		Guidelines:		Guideline on Education and Training in the Conservation of Monuments, Ensembles and Sites (1993)		
Rumah Puan Lamah Hj Saman	HA7	Academic (Universiti Sains Malaysia) / Seconded to the National Heritage Department as Deputy of Commissioner: 2009-2012	E7	Rumah Puan Lamah Hj Saman	HA7	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	L6	<i>'Garispanduan Pemuliharaan Bangunan Warisan 2012'</i> (Guideline in the Conservation of Heritage Buildings) 2012	N5	ICOMOS Charter: Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage (2003)		
Rumah Norfiah Hassan	HA8	Academic (Universiti Teknologi Malaysia (UTM) / Director of Center for the Study of Built Environment on the Malay World (KALAM)	E8	Rumah Norfiah Hassan	HA8							
Resident caretakers	B.	Academic / Deputy Director of Institute Sultan Iskandar Universiti Teknologi Malaysia	E9	Resident caretakers	B.							Scottish Historic Environment Policy (2011)
Rumah Hajjah Sali Salleh	HB1	Academic International Islamic University Malaysia (UIA)	E10	Rumah Hajjah Sali Salleh	HB1							
Rumah Kalsom Sohor	HB2	Academic/ Architect/ Writer/ Encyclopaedist Infrastructure University, Kuala Lumpur (IUKL)	E11	Rumah Kalsom Sohor	HB2							
Non-resident house owner but non-resident caretaker	C.	Academic (Polytechnic, Port Dickson, Negeri Sembilan) (PolyPD)	E12	Non-resident house owner but non-resident caretaker	C.							
Rumah Posah Sawal	HC1	Conservator -Anjung Teknik (Melaka)	E13	Rumah Posah Sawal	HC1							
Rumah Hajjah Niat Jalil	HC2	Conservator/ Contractor-NTQT Sdn. Bhd. (Melaka)	E14	Rumah Hajjah Niat Jalil	HC2							
Abandoned	D.	Director of Negeri Sembilan Museum	E15	Abandoned	D.							
Rumah Che Tom Sulaiman	HD1	Melaka Museum Corporation (PERZIM)	E16	Rumah Che Tom Sulaiman	HD1							
		Heritage Officer, National Heritage Department (NHD)	E17	Rumah Sonyum Badul	HD2							
		Senior Research Officer, Timber Engineering Laboratory, Forest Research Institute Malaysia (FRIM)	E18	Rumah Penghulu Syed Abu Bakar	HD3							
Rumah Dato' Perba Meon	HD4	Senior Research Officer, Timber Preservation Analysis Laboratory, Forest Research Institute Malaysia (FRIM)	E19	Rumah Dato' Perba Meon	HD4							
Rumah Tukang Kahar	HD5	Pensioner- Senior Research Officer, Timber Preservation Analysis Laboratory, Forest Research Institute Malaysia (FRIM)	E20	Rumah Tukang Kahar	HD5							
Rumah Tiawan Hasan	HD6	Chief Assistant Secretary, Negeri Sembilan State Government	E21	Rumah Tiawan Hasan	HD6							
		Chief Assistant District Office, Kuala Pilah District & Land Office	E22	Rumah Zuhairah Talib	HD7							
		Director, National Occupational Skills Standard (NOSS), Department of Skills Development	E23	Rumah Hajjah Ropah	HD8							
Rumah Maimunah Yaakub	HD9	Ketua Kampung Kuala Pilah (Head of Kampung)	E24	Rumah Maimunah Yaakub	HD9							
Rumah Dato' Seri Maharaja	HD10	Ketua Kampung Rembau (Head of Kampung)	E25	Rumah Dato' Seri Maharaja	HD10							
				Rumah Hajjah Selipah	HD11							
				Rumah Dato' Muda Hj Omar Lajim	HD12							
				Rumah Dato' Undang Serun	HD13							

Table 4 shows the four research elements that were analysed according to Miles and Huberman (1994), and were used to explain the responses from the perspectives of house owners and experts, on-site observations in addition to the review of local, national and international heritage documents. Miles and Huberman (1994) asserted that there is no clear boundary in explaining and describing the data as the matrix is used to look for patterns. The matrix is used for large and dense data and to reflect the complexity of conducting multi-site research (Nadin and Cassell, 2004).

All of these original findings were organised into ‘key elements’, to gain an overview of patterns across the data set in four sections of the framework i.e. Preamble, Conservation Principles, Conservation Protection and Conservation Practice. The four matrix sections, the house owner interviews (17 nos), expert interviews (25 nos), observations (17 nos) and document reviews (19 nos) are shown in Table 4.2. Further explanation was elaborated in Chapter 5 (Interviews), Chapter 6 (Observations) and Chapter 7 (Document Reviews) before they were triangulated in Chapter 8 for an overall discussion of the key findings. Then, the discussion was formed to further develop the initial framework. The next step was to validate the initial framework using the conservation experts’ review (8 nos) before finalising and interpreting it in a final framework, as discussed in Chapter 9.

Table 4.2: Matrix Thematic for Establishing a Conservation Principles Framework for the NSTMH.

Matrix Thematic	
(1) House Owners Interviews:	
(a) Resident House Owners	-HA1, HA2, HA3, HA4, HA5, HA6, HA7, HA8
(b) Resident Caretaker	-HB1, HB2
(c) Non-resident House Owner but Non-resident Caretaker	-HC1, HC2
(d) Abandoned	-HD1, HD4, HD5, HD6, HD9, HD10
(2) Expert Interviews:	
	-E1, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25
(3) Observation on site:	
(a) Resident House Owners	-HA1, HA2, HA3, HA4, HA5, HA6, HA7, HA8
(b) Resident Caretaker	-HB1, HB2
(c) Non-resident House Owner but Non-resident Caretaker	-HC1, HC2
(d) Abandoned	-HD1, HD2, HD3, HD4, HD5, HD6, HD7, HD8, HD9, HD10
(4) Document Reviews:	
(a) Local	-L1, L2, L3, L4, L5, L6
(b) National	-N1, N2, N3, N4, N5
(c) International	-I1, I2, I3, I4, I5, I6, I7, I8,

## **4.5 Overview Method of Analysis**

At this stage, researchers can become overwhelmed (Bloomberg and Volpe, 2012). There is no right or wrong answer as long as all the data suitable for answering the research objectives have been analysed and directly connected to the actual research question. The process of qualitative data analysis is to summarise all of the collected data which bring order and meaning.

The method of analysis was holistic and was based on thematic analysis (interviews), analysis of pattern (observations) using Matero's concept model of cultural heritage (2006) and template analysis (document reviews). The phenomena were understood within the particular issue of the social and historical context of the challenges in the conservation of the NSTMHs. The voices of both the house owners and experts were retained as part of the interpretation of meanings through selected quotations to highlight particular issues and context. The analysis aimed for a sensitive understanding from the context of the house owners' and experts' perspectives, through illuminating the changing patterns of the houses' form, fabric and function, and by reviewing the heritage legislation documents (local, national and international) in the context of conserving the vernacular architecture of the NSTMH and its conservation principles.

The analysis began with transcription of all the data and its subsequent translation from Malay to English and the process of transcribing, translating and analysis of transcripts was time-consuming beyond expectation as also supported by (Bryman, 2012; King and Horrocks, 2010). This study identified broad patterns of common themes from the fully transcribed data, especially in exploring the house owners' and experts' personal experiences of the challenges involved in conserving the NSTMHs.

In this research, the coding process involves sequential phases: preliminary code, final codes and categories (Saldaña, 2013; Silverman, 1993). The meaning of the interpretation was based on the transcribed data digitally recorded during the interviews and where the researcher played an active role in enhancing reliability, as

suggested as an approach by Silverman (2000). The data were reread several times in an attempt to obtain any necessary verifications. All interview data were recorded, transcribed, translated and analysed using the thematic analysis approach.

#### **4.5.1 Thematic Analysis**

According to Bloomberg and Volpe (2012), thematic analysis is ‘not for purposes of generalizing beyond the case but rather for a rich description of the case in order to understand the complexity thereof’ (p. 31). A thematic analysis is a useful discussion of what counts as a theme (Saldaña, 2013; King and Horrocks, 2010). Analysing the data through thematic analysis involves a process of determining what should be included, what should be discarded and how this should be interpreted in a way that reflects on the researcher’s decision-making (King and Horrocks, 2010). Not only that, it implies some degree of repetition, with data appearing frequently and as distinct from each other, recurrent in the interpretation process. Sometimes it reflects a theme unique to the individual. The identified themes should be relevant to the research question (King and Horrocks, 2010). Thematic analysis is what people are saying as a whole, determined by looking at patterns that appear from the similarities or differences across the full data set. In this research, thematic analysis is conducted more on a cross-case analysis with the house owners and is also applied to the experts as well.

The thematic analysis was organised to reflect how those themes are conceptualised to relate to each other, which involves a hierarchical conceptualisation of the main themes and sub-themes (King and Horrocks, 2010). The two-level hierarchy as suggested by Braun and Clarke (2006) is applied in this research as it can be varied between approaches. The ‘integrative themes’ were permeated in the house owners’ interviews and one of the expert’s interview data without any sub-themes. The main purpose of having the thematic analysis is to aid in the understanding of other people with clear and comprehensible possibilities for the research issue to be investigated. It should be well organised and not oversimplify the depth of the data in a qualitative approach (King and Horrocks, 2010). This visually effective means of analysing data is achieved through the concept of a ‘tree’ diagram style (Braun and



Clarke, 2006), which is reflected in this study. The ‘cycle’ back and forth concept was also applied at this stage to redefine, reapply and clarify thinking using the preliminary codes (descriptive) and final codes (interpretive) before arriving at the overarching themes as the main themes (Saldana, 2013; King and Horrocks, 2010).

The themes can be inducted directly from the text or influenced by the literature. This research was not intended to examine social processes as in a grounded theory. This research aims mainly to obtain an interpretive description based on an exploration of the house owners’ and experts’ views on the challenges of conserving the NSTMHs. In addition, this research was also not initially intended to generate a ‘theory’, which is the ultimate aim of the inductive approach. The formation of codes and themes were based on the transcribed data gathered from them. A large amount of qualitative interview data requires a better way of analysing it. Through thematic analysis, it makes sense to look at the data and attempt to identify the descriptive patterns arising from the stories contained therein (King and Horrocks 2010). Thematic analysis was used for the house owners’ and experts’ interviews, as further discussed in Chapter 5.

Gaining an understanding of the basic coding of qualitative research through software such as NVivo, ATLAS Ti or even Quirkos can sometimes be overwhelming for researchers, including myself. The trial-and-error process with this software is very time-consuming when there is a large volume of data. Although the software may be used to enhance the value of the research (Tobi, 2014), there is a tendency for the researcher to become more focused on the software than on the data (Saldana, 2009). Manual analysis of data enables the researcher to control the research and its ownership (Saldana, 2009). According to Tobi (2014), the use of computer software could help the researcher to reduce the amount of time spent analysing the data, but this may in turn depend upon the researcher’s ability to analyse the data in the time frame available. According to Saldana (2009), the preliminary code or descriptive code is,

‘appropriate for virtually all qualitative studies, but particularly for inexperienced qualitative researchers learning how to code data and studies using a wide variety of data forms, for instance interview transcripts, field notes, journals, documents, diaries, correspondence, artefacts and video’. (p. 70)

The coding process becomes immersed in the reading of data and re-reading of transcripts, labelling to generate appropriate codes and arranging the codes into categories/themes. At some point, a mix coding process with software shows limitation where all of the information needed eventually is much more efficient to be carried out manually. The key issues to emerge from the interview findings were explored in more depth through on-site observation of the 26 NSTMHs (Table 4.1.) This emergence will also triangulate the data as well as validate it.

#### **4.5.2 Analysis using the Concept Model of Cultural Heritage**

The changing patterns of the form, fabric and function of the NSTMHs were analysed using Matero’s concept model of cultural heritage (2006), as explained in Chapter 6. According to Matero (2006), they are ‘tied together in defining works of art and architecture; however, depending on the situation, can choose any number of compensation strategies, either privilege one construct over the other or attempt to present all three in balance’ (p. 85). This research attempts to analyse all three in balance, as shown in Table 6.2, according to the main typology of the NSTMH – *Serambi*, *Rumah Ibu* and *Rumah Dapur*. The balance of this relationship constructs on many factors, such as cultural, social, technical, utilitarian, economic and visual, etc., according to the structural or architectural elements. These constructs can also ‘be positioned to display the dominance or balance of one or more of the three constructs that define heritage and offer a means of assessing the immediate outcome and long-term effects of any intervention decision including compensation’ (Matero, 2006, p. 86).

In order to capture all that, the on-site observation was fundamental. That is the only way to record changes and change essentially into how the house owners appreciate the form, fabric, and the function. On-site observation was the best way to capture the changes in form, fabric and function which directly immersed prior to

interpreting the emerging data and developing findings inductively (Silverman, 2000). The data were sorted according to possible categories that were further explained using the evidence obtained from the interviews and photographs taken at the site as a sensible option (Silverman, 2000). Changes made to the houses were shown schematically in the plan and section, evidence of photos on the site and with the overall pattern of changes identified in Table 6.2. Figure 4.5 shows an example of the detailed observation undertaken of the changes in the form, fabric and function of the houses according to the main typologies of NSTMHs (*Serambi*, *Rumah Ibu* and *Rumah Dapur*).

NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	FORM		CHANGES FABRIC		FUNCTION		OVERALL CHANGES PATTERN
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
1.	(Category A) HAI	<b>SERAMBI</b>	On stilts and long roof type	As Original	Timber	As Original	Entertain guest	As Original	BACK
		Roof	Traditional	Refurbished (a)	Palm leaves	Zinc (a)	-	-	
		Wall	Traditional	Remain	Timber	As Original	-	-	
		Ceiling	No	-	-	-	-	-	
		Floor	Traditional	As Original	Timber	Timber (covers with vinyl) (h)	-	-	
		Staircase	Traditional	As Original	Concrete	As Original	-	-	
		Window	Traditional	As Original	Timber	As Original	-	-	
		Door	Traditional	As Original	Timber	As Original	-	-	
		Others	As Original	As Original	Timber	As Original	-	-	
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As Original	Timber	As Original	Sleeping area, entertain guest	As Original	
		Roof	Traditional	Refurbished (a)	Palm Leaves	Zinc (a)	-	-	
		Wall	Traditional	As Original	Decorative timber panel	As Original	-	-	
		Ceiling	No	-	-	-	-	-	
		Floor	Traditional (Raised floor)	As Original	Timber	Timber (covers with vinyl) (h)	-	-	
		Window	Traditional	As Original	Timber	As Original	-	-	
		Door	Traditional	As Original	Timber panel	As Original	-	-	
		Others	-	-	-	-	-	-	
		<b>RUMAH DAPUR</b>	On stilts	On the ground	Timber	Modern construction and finishes	Kitchen	Two side entrances, living room, dining, bedrooms, kitchen, toilet and foyer (i)	
		Roof	Traditional (Pitch roof)	Refurbished (Limas roof) (a)	Palm leaves	Ardec (a)	-	-	
		Wall	Traditional	Refurbished (b)	Timber	Bricks, concrete and vent blocks (b)	-	-	
		Floor	Traditional (raised floor on stilts)	Refurbished (on the ground) (c)	Timber	Concrete slab with cement render covers with vinyl (kitchen), tiles (toilet, dining) (c)	-	-	
		Ceiling	No	Yes (d)	-	Ceiling board (dining and bedrooms), no Ceiling at Kitchen area (d)	-	-	
		Staircase	Yes	New staircase (e)	Timber	Concrete (e)	-	-	
		Window	Traditional	Refurbished (f)	Timber	Casement (f)	-	-	
		Door	Yes	Demolished (g)	Timber	New timber door (g)	-	-	
		Others	-	-	-	White point, electric fan, flyer roman column with cement render, drainage system (i)	-	-	



Figure 4.5: Example of the detailed observation on the changes in the form, fabric and function according to the main typologies of Negeri Sembilan TMHs (the *Serambi*, *Rumah Ibu* and *Rumah Dapur*).

Source: Author (2014)

### **4.5.3 Template Analysis**

Template analysis is a ‘more flexible technique with fewer specified procedures, permitting researchers to tailor it to match their own requirement’ (King, 2004b, p. 257). It involves a hierarchical structure that can be modified for the needs of any research area and applied in a range of epistemological positions (King, 2004b). In other words, research concerned with ‘discovering’ underlying causes of human action with coding flexibility from different perspectives depending on the context of the study (King, 2004b; Miles and Huberman, 1994). Besides this, template analysis is also suitable for larger data sets that are less time-consuming (King, 2004b). It also involves a list of codes representing themes identified in the data and is essentially descriptive with little or no analysis (King, 2004b).

Template analysis requires an interpretation that, according to (King, 2004b), is ‘inappropriate to set out any general rules for how a researcher should go about the task of interpreting coded data; a strategy must be developed which fits the aims and content of a particular study’ (p. 266). In other words, there is no ideal way to present the findings of template analysis (King, 2004b).

In this research, template analysis will be adopted in establishing the NSTMH Conservation Principles Framework through document reviews. As it gives, more flexibility that can be suited to the research needs (large data sets of interviews, observation and document reviews) which part of the research strategy to achieve the research aim. The revising process is necessary to enhance the template as it gives certain adaptability to the data. Therefore, the three main phases involved in this research are presented below:

1. Creating an initial template;
2. Revising the initial template; and
3. Establishing a final template.

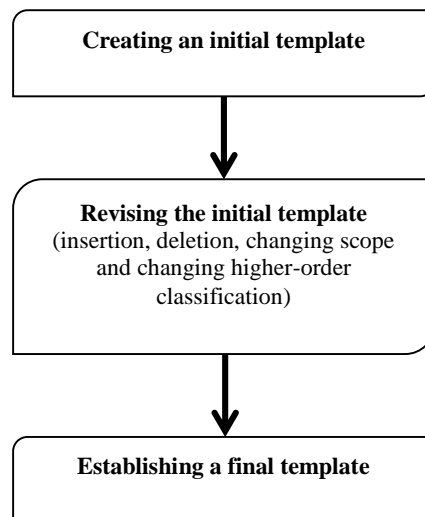


Figure 4.6: Three main phases in template analysis  
*Source: Adapted from King (2004)*

### **Creating an initial template**

The interview topic guide or any sources such as academic literature, informal evidence, exploratory research and the researcher's personal experience could be used as pre-defined codes (King and Horrocks, 2010). In this research, the pre-defined codes are the 'elements' which derived from the findings of interviews, observation and document reviews (Figure 4.7). The emerged 'elements' called 'key elements' were then identified to fit into the four categories or sections under Preamble, Conservation Principles, Conservation Protection and Conservation Practice. As can be seen in Figure 4.8, the initial template consists of four highest-order elements to one or two levels of lower-order elements. The 'key elements' are more related to the research objectives, and 'elements' were processed by the matrix thematic.

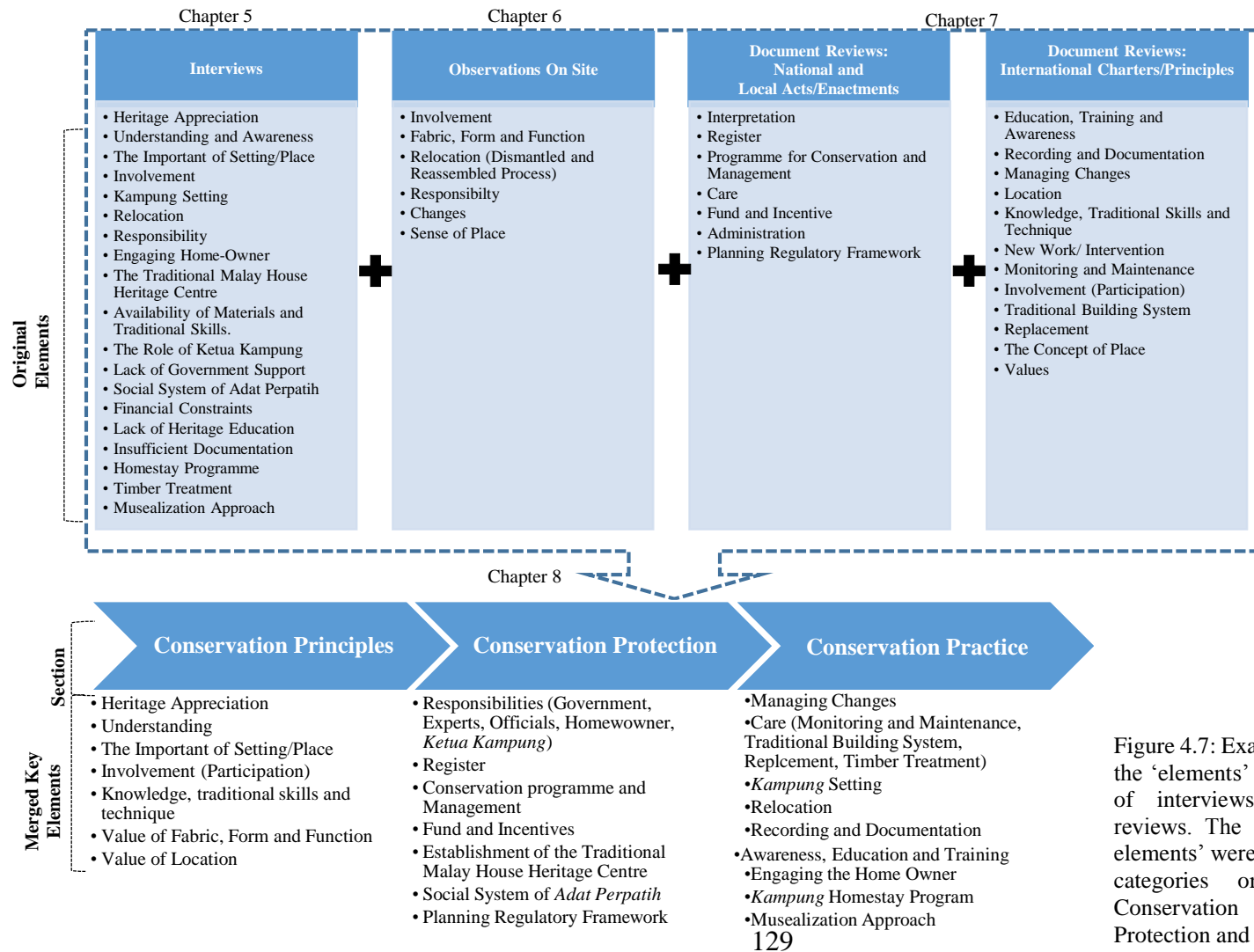


Figure 4.7: Example of the pre-defined codes are the 'elements' which derived from the findings of interviews, observation and document reviews. The emerged 'elements' called 'key elements' were then identified to fit into the four categories or sections under Preamble, Conservation Principles, Conservation Protection and Conservation Practice.

Figure 4.8: Example of the initial template for the NSTMH-CPF

Sections	Key Elements
<b>1 Preamble</b>	<ol style="list-style-type: none"> <li>1. Why do we need to conserve?</li> <li>2. The Negeri Sembilan TMH is recognised by:</li> <li>3. Who is the NSTMH-CPF for?</li> <li>4. How to use this NSTMH-CPF?</li> <li>5. Where does this NSTMH-CPF apply to?</li> <li>6. Interpretations/ Definitions</li> </ol>
<b>2 Conservation Principles</b>	<ol style="list-style-type: none"> <li>1. Heritage Appreciation</li> <li>2. Understanding</li> <li>3. The Important of Place               <ol style="list-style-type: none"> <li>1 Sense of Place</li> </ol> </li> <li>4. Involvement               <ol style="list-style-type: none"> <li>1 Homeowner</li> <li>2 <i>Ketua Kampung</i></li> </ol> </li> <li>5. Traditional skills and technique</li> <li>6. Value of Fabric, Form and Function               <ol style="list-style-type: none"> <li>1 Changes</li> </ol> </li> <li>7. Value of Location</li> </ol>
<b>3 Conservation Protection</b>	<ol style="list-style-type: none"> <li>1. Responsibilities               <ol style="list-style-type: none"> <li>1 Experts</li> <li>2 State Government/ Local Authority</li> <li>3 Academic</li> <li>4 Museum</li> <li>5 Industry</li> <li>6 <i>Ketua Kampung</i></li> <li>7 Homeowner</li> </ol> </li> <li>2. Register               <ol style="list-style-type: none"> <li>1 Inventory</li> </ol> </li> <li>3. Conservation Program and Management</li> <li>4. Fund and Incentive</li> <li>5. Planning Regulatory Framework</li> <li>6. Establishment of the Traditional Malay House Conservation Centre</li> <li>7. Social System of <i>Adat Perpatih</i></li> </ol>
<b>4 Conservation Practice</b>	<ol style="list-style-type: none"> <li>1. <i>Kampung</i> Setting               <ol style="list-style-type: none"> <li>1 Layout</li> <li>2 Landscape</li> </ol> </li> <li>2. Care               <ol style="list-style-type: none"> <li>1 Monitoring and Maintenance</li> <li>2 Traditional Building System</li> <li>3 Replacement</li> <li>4 Timber Treatments</li> </ol> </li> <li>3. Managing Changes               <ol style="list-style-type: none"> <li>1 Change of use</li> <li>2 Disturbance Fabric</li> <li>3 Cautious Approach</li> </ol> </li> <li>4. Relocation               <ol style="list-style-type: none"> <li>1 Dismantling Process</li> <li>2 Reassembling Process</li> <li>3 Musealization Approach</li> </ol> </li> <li>5. Recording and Documentation</li> <li>6. Education, Training and Awareness</li> <li>7. Engaging the Home Owner</li> <li>8. <i>Kampung</i> Homestay Program</li> </ol>



## **Revising**

Revising the template involves insertion, deletion, changing the scope and changing higher-order classification (King, 2004b). It gives more flexibility to determine the best ‘elements’ that suited to the research needs by revising the initial template whichever relevant. For example, an initially defined code may be deleted if the code found not applicable or insert a new code if not covered by an existing code or may change scope either too narrowly defined or otherwise, which need to be re-defined. In this research, revision of the initial template was conducted through a validation process involving conservation experts in Malaysia and Scotland, and is discussed further in Chapter 9, section 9.1.

## **Final template**

From the revising step, it allows certain parameters to be chosen that suits to the research need towards developing the ‘final’ template. According to King (2004b), there is limited time to produce an ‘ideal’ template, as research faces external constraints, but it is ‘good enough’ if it can be classed as unique as no template can ever be considered ‘final’. He also pointed out that experts could help the researcher to determine whether the template is sufficient to prevent any modifications from having to be made through the validation process.

In the end, a well thought-out ‘final template’ was constructed through the validation process from the experts’ review, as discussed in Chapter 9.

## **4.6 Issues of Trustworthiness**

In quantitative research, validity and reliability are commonly used to evaluate the quality of research. According to Silverman (2013), in qualitative research, there are no rules to establish the ‘truth’ of the research. Also, Miles and Huberman (1994) believe that the quality of qualitative research is more related to the term ‘trustworthiness’, which relates to the dependability, credibility, transferability and confirmability of the research findings. In this research, quality is described below:

The issue of trustworthiness is evaluated by establishing the credibility and dependability of not only the triangulation of all three methods (interview, observation and document review) but also the validation process of the conservation principles framework by the experts' review. Experts were selected for the validation process through a process of criterion sampling in which all participants had to meet one or more criteria, as predetermined by the researcher, in order to be classified as suitable for the research (Bloomberg and Volpe, 2012). For example, one of the criteria is about their experiences and involvement in developing, planning or managing conservation plan regardless of any built environment but possibly, who is related to the conservation of vernacular architecture. Prior to this, a full discussion took place through development of the initial framework before it was validated to form a meaningful and applicable conservation principles framework for the vernacular architecture of the TMH in Negeri Sembilan.

### *Credibility*

The credibility of this research is set by the triangulation of multiple sources and by validation of the findings with experts. The concept of triangulation relates to the use of a variety of data sources or multi-methods of data collection (Bryman, 2012; Bloomberg and Volpe, 2012; Mays and Pope, 2000). It also enhances the validity of the qualitative research (King and Horrocks, 2010). The use of different methods can compensate their limitations and exploits their respective benefits (Shenton, 2004).

In addition, Mays and Pope (2000) further highlighted to '*look for patterns of convergence to corroborate an overall interpretation. It is also a way of ensuring comprehensiveness and encouraging a more reflexive analysis of the data than as a pure test of validity*' (p. 51). The convergence of the data through the triangulation of multiple sources applied in this thesis is further discussed in Chapter 8, section 8.2 and 8.3).

Its credibility is also established through the selection of appropriate and independent interviewees with different levels of experience and involvement that refines the findings through a 'validation process' (Silverman, 2000). The 'validation

process’ was carried out after establishing the initial framework through the experts’ review in Malaysia and Scotland, where this study was developed. Their feedback was used to enhance and finalise the template, as they are established professionals who deal with such frameworks constantly to establish the final conservation principles framework for the NSTMH.

### *Transferability*

According to Bloomberg and Volpe (2012), transferability is about the ways in which our understanding and knowledge can be applied in similar contexts and settings. In the end, the findings should provide the basis for a rich description of qualitative accounts that are relevant to the broader context. Transferability of this research was enhanced by the inclusion of variation in the selected study sample as well as making the conservation principles framework flexible to use in another context of the TMH in Malaysia. Although the study sample is specific to the NSTMH, the variation of its design differ from one another (see Chapter 6, figure 6.3 and table 6.2). As mentioned in the ‘final’ framework (Chapter 9), the NSTMH shared similar characteristics with other TMHs, with regard to the raised on stilts, long roof, timber materials, and others (see Section 2.3)

### *Dependability*

Dependability or reliability in quantitative research (Bryman, 2012; Bloomberg and Volpe, 2012) in this context refers to a clear and transparent process whereby the data are collected and analysed. The ways in which data were collected and analysed to enhance the dependability of this study were presented in the earlier part of this chapter, as discussed further in Chapters 5, 6, 7, 8 and 9. The research process involved was reported in detail from the interview session with the house owners and the experts, on-site observation and to reviewing all related documents that clearly defined its aims towards establishing the conservation principles framework.

### *Confirmability*

Thorough interaction with the respondents to avoid any bias arising out of the personal interest of the researcher depends greatly on the subject and condition of inquiry. Any

personal assumptions are avoided by triangulating the issues from both a micro (i.e. the house owners and their houses) and macro perspective (i.e. the experts, context of legislation documents) and the gathering of similar experiences in other countries through literature. These are in the form of the experiences and ideas of the house owners and conservation experts. The role of triangulation in promoting such confirmability was emphasised to reduce bias (Shenton, 2004). The motivation for conducting the research arises mainly out of the potential for exploring the reality of the problem of abandonments and conservation of the NSTMHs.

Overall, the issue of trustworthiness that was explained above highlights how the research process was conducted to evaluate the quality of this study. By identifying the relevant respondents and speaking directly to them, observing the evidence on site of the changing patterns and investigating the relevant documentation, all the challenges mentioned in this chapter such triangulation was part of the overall learning process where it reflect the nature and distinction quality of qualitative research.

#### **4.7 Ethical Review**

This research was declared using the Self-Audit Checklist for Level 1 Ethical Review and was granted approval from the supervisor at the Graduate School of Edinburgh College of Art, University of Edinburgh. No other issues were raised by the Review including the issue of confidentiality as the respondent were anonymised throughout the research process.

#### **4.8 Chapter Summary**

This chapter discussed the research methodology adopted in this research. It consisted of an overview of the qualitative research approaches to achieve the research aim. The matrix thematic was applied to reflect the complexity of conducting multi-method research. An overview of the data collection methods was presented, including face-to-face semi-structured interviews with house owners and experts that were transcribed

and analysed using thematic analysis. On-site observations on the buildings in terms of their changing patterns of form, fabric and function were analysed using (Matero's (2006) concept model of cultural heritage, while a review of legal documents was conducted using template analysis.

All the chosen methods were identified very relevant to achieve all the research objectives which highlight the importance of each method for particular issues been investigated. Furthermore, the issue of trustworthiness was addressed by the provision of the overall intent including the dependability, credibility, transferability and confirmability of the research findings and research approaches that were conducted. Ethical review was also considered for the purpose of data protection and confidentiality.

The next chapter presents the findings of Research Objective 1 (RO1), in identifying the challenges facing conservation of the NSTMH from the perspective of both house owners and experts.



## **CHAPTER 5**

# **IDENTIFYING THE CHALLENGES OF THE CONSERVATION OF THE NEGERI SEMBILAN TRADITIONAL MALAY HOUSE (NSTMH) FROM HOUSE OWNERS AND EXPERTS' PERSPECTIVES**

### **5.1 Introduction**

This chapter focuses on the findings of Research Objective 1 (RO1) to identify challenges in the conservation of the NSTMHs from the perspectives of house owners and experts. Accordingly, this chapter is structured firstly about the house owners' interview, background, and categorisation with thematic analysis. The second part of this chapter focuses on the experts' interview with thematic analysis before end up with the chapter summary.

### **5.2 Background and Categorisation of the House Owners**

A total of 42 NSTMHs were identified from the list of measured drawings gathered from the Center for the Study of Built Environment in the Malay World (KALAM). From these, a total of 26 houses were selected, filtered and examined to meet the needs of the research, which is focused on the purposive sampling of selected historic 19<sup>th</sup>-century houses, the house owners and their own traditional Negeri Sembilan Malay long-roof-type houses, which date back more than 100 years.

From the preliminary survey, the owners' stated classifications were categorised as follows:

Category A: Resident house owners;

Category B: Resident Caretaker;

Category C: Non-resident house owner with non-resident caretaker;

#### Category D: Abandoned.

Only 18 of the house owners were interviewed out of the 26 houses, due to certain barriers including the location and current condition of the houses (demolition and abandonment). There was also the difficulty of locating the heirs of the houses, especially as most of these lived in another region and could not be traced. Their neighbours did not know how to find them and there was an element of luck. One example was *Rumah Tukang Kahar (HD3)*. It was quite difficult to find **HD3** because the site had been cleared due to the relocation after it was bought by the State Museum of Negeri Sembilan. Both the heir to the house and location of **HD3** were found coincidentally; she was contacted and interviewed through her relatives who live opposite the house.

Figure 5.1 and Table 5.1 provide details of the nine house owners interviewed under **Category A (Blue)**. These were: *Rumah Dato' Laksemah Hajah Bogdad (HA1)*, *Rumah Hajah Maharan Jonad (HA2)*, *Rumah Uwan Zunah (HA3)*, *Rumah Dato' Sidin (HA4)*, *Rumah Hajah Rafeah Mohd Yusuf (HA5)*, *Rumah Pesaka Puan Hasnah Hitam (HA6)*, *Rumah Puan Lamah Hj Saman (HA7)*, *Rumah Norfiah Hassan (HA8)* and *Rumah Dato' Gempa Maharaja Hj Mohd Zakaria (HA9)*. Two house owners were interviewed under **Category B (Peach)**. These were *Rumah Hajah Sali Salleh (HB1)* and *Rumah Kalsom Sohor (HB2)*. For **Category C (Yellow)**, only two house owners were interviewed, *Rumah Posah Sawal (HC1)* and *Rumah Hajah Niat Jalil (HC2)*. **Category D (Green)** consists of six NSTMHs. These are *Rumah Che Tom Sulaiman (HD1)*, *Rumah Dato' Perba Meon (HD2)*, *Rumah Tukang Kahar (HD3)*, *Rumah Tiawan Hasan (HD6)*, *Rumah Maimunah Yaakub (HD9)* and *Rumah Dato' Seri Maharaja (HD10)*.

The other house owners under **Category D** were not interviewed for various reasons. Some information was gathered about *Rumah Tiawan Hasan (HD4)* indirectly during the interview with *Rumah Pesaka Puan Hasnah Hitam (HA6)* under **Category A**. Coincidentally, **HD4** is just beside **HA6** in the same compound. Furthermore, the owner of **HD4** is the sister of the owner of **HD6**. *Rumah Tiawan Hasan (HD4)* was also abandoned, as was **HA6**. Besides that, *Rumah Dato' Seri*



*Maharaja (HD10)* was also abandoned and could only be found by asking for help from the villagers. The house owner occasionally lives beside the house in a different compound, but she mostly stays with her daughter in Kuala Lumpur. By coincidence, she was there and it was possible to conduct an interview with her there and then.

At the time of the interview, *Rumah Maimunah Yaakub (HD9)* was still occupied and rented by an Indonesian worker working with her brother, who lives in another *kampung*. It was a coincidence to find the house owner through this worker. The interview was conducted with the sister-in-law of the house owner, who lives in a different *kampung*, as the house owner lives in another region. During the interview, **HD9** mentioned that the house would be dismantled and relocated somewhere else due to the house being sold. Other than that, the rest of the houses, such as *Rumah Penghulu Syed Abu Bakar (HD3)* and *Rumah Hajah Selipah (HD11)* had been demolished and the house owners could not be traced. These houses were quite difficult to find as not much evidence of them was left. The only evidence of *Rumah Penghulu Syed Abu Bakar (HD3)* was a set of concrete stairs in the bushes, and these were found with help from the villagers. The site was cleared and there was nothing left of *Rumah Hajah Selipah (HD11)*. Other than that, *Rumah Sonyum Badul (HD2)*, *Rumah Zuhairah Talib (HD7)*, *Rumah Hajah Ropah (HD8)*, *Rumah Dato' Muda Hj Omar Lajim (HD12)* and *Rumah Dato' Undang Serun (HD13)* were totally abandoned. The house owners could not be traced at all.

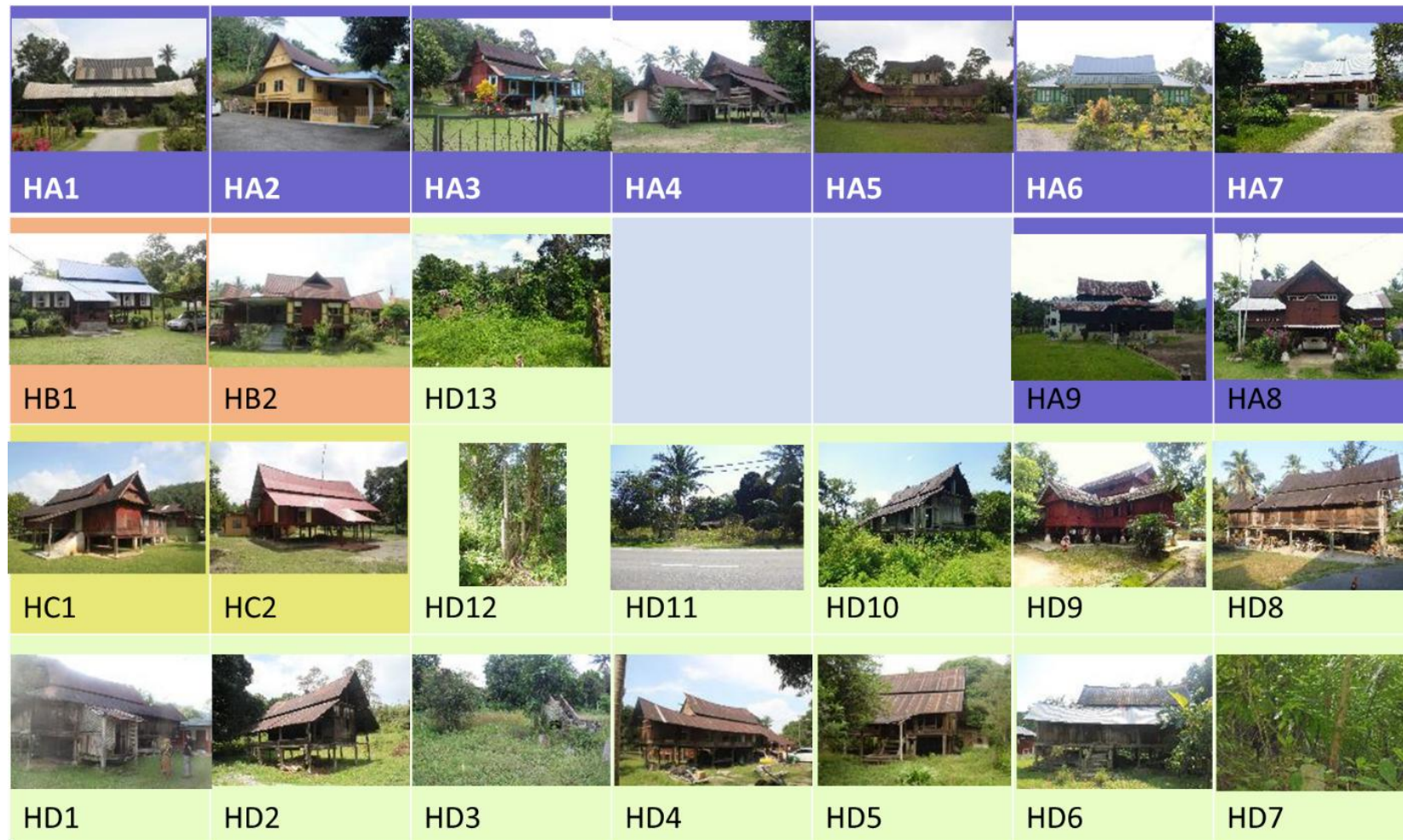


Figure 5.1: Selection of the NSTMHs according to the house owners' categorisations. *Source: Author (2013 & 2014)*

The house owners' categorisation also can be summarised as in Table 5.1 below.

NO	CODES	HOUSE NAME	LOCATION	YEAR BUILT	YEAR OF MEASURED DRAWINGS	REMARKS
<b>A. Resident house owners</b>						
1	<b>HA1</b>	Rumah Dato' Laksemah Hajah Bogdad	Pantai, Seremban	1756	1996/97	
2	<b>HA2</b>	Rumah Hajah Maharan Jonad	Kg. Talang Tengah, Tanjung Ipoh, Kuala Pilah	1840s	2008/09	
3	<b>HA3</b>	Rumah Uwan Zunah	Kg. Umor, Seri Menanti, Kuala Pilah	<1916	2008/09	
4	<b>HA4</b>	Rumah Dato' Sidin	Kg. Tanjung Ipoh, Tanjung Ipoh, Kuala Pilah	1870s	2008/09	
5	<b>HA5</b>	Rumah Hajah Rafeah Mohd Yusuf	Kg. Tengah, Seri Menanti, Kuala Pilah	1905	2008/09	Changed roof materials in June 2014
6	<b>HA6</b>	Rumah Pesaka Puan Hasnah Hitam	Kg. Parit Istana, Seri Menanti, Kuala Pilah	1925	2004/05	
7	<b>HA7</b>	Rumah Puan Lamah Hj Saman	Kg. Galau, Seri Menanti, Kuala Pilah		2008/09	
8	<b>HA8</b>	Rumah Norfiah Hassan	Kg. Galau, Seri Menanti, Kuala Pilah	1880s	2008/09	
9	<b>HA9</b>	Rumah Daro' Gempa Maharaja Hj Mohd Zakaria	Kg. Lada, Rembau	1878	1997/98	
<b>B. Resident caretakers</b>						
10	<b>HB1</b>	Rumah Hajah Sali Salleh	Kg. Talang Tengah, Tanjung Ipoh, Kuala Pilah	1896	2008/09	
11	<b>HB2</b>	Rumah Kalsom Sohor	Kg. Batu HamparSeri Menanti, Kuala Pilah	1920s	2004/05	
<b>C. Non-resident house owners with non-resident caretakers</b>						
12	<b>HC1</b>	Rumah Posah Sawal	Kg. Parit Seberang, Ampang Tinggi, Kuala Pilah	1870	2008/09	Plan to refurbish Rumah Dapur again (attacked by termites)
13	<b>HC2</b>	Rumah Hajah Niat Jalil	Kg. Tanjung Ipoh, Tanjung Ipoh, Kuala Pilah	1820s	2008/09	New refurbished
<b>D. Abandoned</b>						
14	<b>HD1</b>	Rumah Che Tom Sulaiman	Kg. Buyau Kiri, Seri Menanti, Kuala Pilah	1920s	2008/09	Abandoned
15	<b>HD2</b>	Rumah Sonyum Badul	Kg. Parit Seberang, Ampang Tinggi, Kuala Pilah	1915	2008/09	MIA (Owners cannot be traced)
16	<b>HD3</b>	Rumah Penghulu Syed Abu Bakar	Peradong, Jelebu		1998/99	Demolished
17	<b>HD4</b>	Rumah Dato' Perba Meon	Kg. Parit Seberang, Ampang Tinggi, Kuala Pilah	End 1800	2008/09	Stay in a new house behind this house
18	<b>HD5</b>	Rumah Tukang Kahar	Kg. Tengah, Seri Menanti, Kuala Pilah	1880	1993/94	State Museum bought the house to become a gallery
19	<b>HD6</b>	Rumah Tiawan Hasan	Kg. Parit Istana, Seri Menanti, Kuala Pilah	1844	2004/05	Abandoned
20	<b>HD7</b>	Rumah Zuhairah Talib	Kg. Mertang, Seri Menanti, Kuala Pilah	1900	2008/09	Abandoned
21	<b>HD8</b>	Rumah Hajah Ropah	Kg. Galau, Seri Menanti, Kuala Pilah	1858	2008/09	Abandoned
22	<b>HD9</b>	Rumah Maimunah Yaakub	Kg. Tanjong Penajis, Chengkau, Rembau	1919	2012/13	Relocated
23	<b>HD10</b>	Rumah Dato' Seri Maharaja	Kg. Pilah Tengah, Kuala Pilah	1870		Abandoned
24	<b>HD11</b>	Rumah Hajah Selipah	Jalan Senaling, Kuala Pilah		1994/95	Demolished
25	<b>HD12</b>	Rumah Dato' Muda Hj Omar Lajim	Kg. Bukit Gombang Lama, Batu Kikir, Jempol	1900	1996/97	Abandoned
26	<b>HD13</b>	Rumah Dato' Undang Serun	Kg. Tanah Datar, Rembau	1883	1997/98	Abandoned

Table 5.1 provides further detail of the NSTMHs that were surveyed, stating the ages of the houses, when the measured drawings were conducted and the real state of their conditions based on the house owners' categorisation. The majority had been abandoned and demolished, as in category D.

Mostly, all of the interviews were conducted on site at the house owners' houses and at the same time, visual observations of the house were made by taking photographs. There were some limitations to conducting the interviews as most of the house owners were elderly and it was difficult to understand their local dialect and accent.

### **5.3 Response from the House Owners**

This section represents part of the findings of research objective 1 (RO1), which was to look into the challenges in the conservation of the NSTMHs from the house owners' perspectives. Another part of the findings was gathered later from the experts' perspective (section 5.4). These findings were analysed manually using generic thematic analysis by extracting the raw data or what counted as a theme from the transcribed data (interview transcripts) (Saldaña 2013).

The interview data were firstly analysed by identifying a suitable coding as the preliminary codes (first cycle). Then, all the preliminary codes gathered from all respondents were captured, grouped to find suitable final codes (second cycle) and these were later represented again with the idea as a concept or in particular themes. All of the codes were generated from the data. These processes were repeated again and again until the themes of the overall findings were represented.

The findings indicate the broad variety of owners' views, albeit with an occasional misunderstanding of the typology. The findings were categorised into two themes; Understanding and Awareness, and Heritage Appreciation, according to the responses gathered from the house owner interviews, which are discussed below.

### 5.3.1 Understanding and Awareness

In this theme, the researcher intended to identify the challenges relating to the house owner's knowledge of the architectural background of the house, how they valued the house, the construction type, the condition of the house and aspects of maintenance, as well as the heritage protection framework towards the conservation of the NSTMHs. These issues were discussed according to the specific categories A, B, C and D prior to them being merged into an overall summary of this theme. By explaining this, the overall picture representing each category will determine and identify the way in which the house owners understand and are aware of the need to conserve the NSTMH. This will be used as evidence in this context to answer the first objective, which is to identify the challenges of the conservation of the NSTMHs from the house owners' perspective.

From the interviews conducted, all of the house owners (A, B, C and D) were aware of the background of their house as they had all lived in the house at least once since their childhood. Most considered their house to be a *Minangkabau* type, which has a distinctive curved roofline, where the gables sweep up at each end in the shape of buffalo horns. This shows a misunderstanding among them about the true architecture of NSTMH compared to Minangkabau houses (Figure 2.13). Due to their limited knowledge, this perception was accepted by most of them. The NSTMH's roof shape is easy to recognise compared to Rumah Melaka, as illustrated by HA8. Most of the respondents shared their honest opinions and experience about the house, such as the owner of HA9, who claimed that her house was bought somewhere else and that it had been transferred many times to and from the current site. She still remembers the history of the house:

*'This house is about 180 years old. This house was originally from Nerasau, Rembau. It was bought by my late great grandfather 'Dato' Gempa Tiang Empat' from its previous owner who sold the house to him after a tragic incident happened to his wife during childbirth. This house was dismantled from the original site in Nerasau and reassembled here.'*

*'This house was full of pigs when under the Japan conquest.'*

*'One day, when the King George V came to Singapore to look at traditional house, my late grandfather dismantled this house for a second time and brought it to*

*Singapore by train. Other people only brought small model houses but my late grandfather brought the real house and reassembled it there. My mum also went there at the age of 16 years old. Tok Samsi is the same person who dismantled and reassembled the house. When they transferred the house for the third time to here, that's why it is not quite right, especially since Tok Samsi passed away.'*

Due to their age, some of the owners under **Category A** had difficulty understanding (knowledge and hearing problems) the topic being discussed, such as **HA4**, **HA6** and **HA7**. They also had a tendency to give the same answer to different questions. Besides that, the owners' different knowledge and backgrounds sometimes affected the shape of the answers they gave, such as **HA5**, who was a lecturer and is now a pensioner. Almost all of the houses represent the high status of people in the past from different *kampung*. One of the most significant findings is that **HA7** put a great deal of effort into preserving one of the original footings (foundations) when major renovation work was carried out on the house. She personally requested that the contractor leave one piece of the original footings and she stated that this was in order to give a sense of memory to her grandchildren (Figure 5.2).



Figure 5.2: One of the original footings remained as a form of evidence at HA7.  
Source: Author (2013)

As for the **Category B** house owners, they also had a clear grasp of the characteristics of the Negeri Sembilan houses, such as the low door at the main entrance to the house; this was mentioned by **HB2**. He also knew why NSTMHs have two *Serambi*, which reflects the tradition and customs of the community, especially in

wedding day ceremonies in the *Adat Perpatih* social system. It was also noted by **HB1** that the main door at *Rumah Ibu* was full of decorative carved elements (one piece of solid timber). **HB2** claimed the original *Anjung*'s roof to be a *limas* type, which is quite contradictory to the existing long roof shape (curved at both ends) of the *Serambi* and *Rumah Ibu*. This *Anjung* is only allowed for high-status people as normal people cannot do that, he added.

As caretakers under **Category C**, coincidentally, their house is near to the location of the case study house, which also used to be part of the land. Both of the caretakers live at the back of the house; they are separated by the road (**HC1**) and by the fence (**HC2**). Both of them agreed that the most specific task they shared was to clean up the house and its compound at least once a week (e.g. sweeping and burning the rubbish). This activity had been carried out since the house was occupied for the first time. **HC1** and **HC2** added that this action was believed to have a direct connection to the house (to make the house 'alive' with the smoke). Their responsibility is also similar to those in Category A, although they are just caretakers. **HC2** noticed that,

*'The house has a vase of water that was used to clean our feet before entering the house'*

As for **HC1**,

*'The end of the tebar layar shall be opened to allow daylight enter inside the house.'*

The **Category D** owners also reflected a similar understanding according to their personal experiences. As mentioned by **HD4**,

*"The original house was shifted from Seri Menanti to this current location by using the river because of the high status of her late grandparent as Dato' Muar."*

**HD4** also remembered that,

*'There was an arch of the main gate in the past.'*

According to **HD1**, the house was left abandoned for more than 20 years after her mother passed away. She only remembered that the house has remained as it is now since it was erected. In another scenario, although **HD9** is only the sister-in law of the house owner, she also knew about the house as she used to go there following her marriage to the owner's brother. According to her, this house is very beautiful and can be considered a big house. The original *Rumah Dapur* is made of timber and is built on stilts. It has since been torn down and replaced with a half-brick, half-timber construction on the ground floor. The clay roof tiles are the original materials of the house, claimed **HD9**.

As a single mother, **HD10** was usually away at her daughter's house in Kuala Lumpur and did not reside permanently in the *kampung*. She realised that the house was going to collapse. She could not remember much about the house in the past because of her age. The *Rumah Dapur* was built with six pillars, which are isolated from the *Rumah Ibu*. She remembered that the house consisted of 16 pillars with *pecah lapan* (an octagon shape) and belonged to a high-status person called 'Dato' Bangsa'. Not only that, she also asked, due to her current situation,

*'Who is going to take care of the house?'*

**HD10** claimed that her daughter does not care about the house as she already has a bungalow. Her children were not interested in looking after the house either, she added. She could not guarantee that her daughter would return to the *kampung* when she retires. She had a feeling that this house would be gone after she died and she felt hopeless about it.

Not only was the basic understanding of the architecture of the house examined but also how the house owners valued their houses. The interpretation of what they understand and value might differ as they perceive things differently. This includes all types of the house owners. The house owners living in the houses – **HA1, HA3, HA4, HA5, HA7, HA8** and **HA9** – claimed that the houses were priceless, full of meaning and beautiful decorative elements and were unique. They stated that they were very comfortable and that it was very rare to get this type of house nowadays. They all understood and shared the special characteristics of this traditional house, except for



**HA2.** According to **HA2**, there is nothing special about the house, although she realised the existence of the beautiful decorative wall panel and door at *Rumah Ibu*. This house was painted in bright yellow, which had changed the original fabric to a more modern appearance. Not only that, the compound and the underneath of the house were covered by tarmac, which hid the footings of the house (Figure 5.3).



Figure 5.3: HA2 was painted in bright yellow with a modern appearance. The compound and the underneath of the house were covered with tarmac, which hid the footings of the house.  
*Source: Author (2013)*

Everyone seemed to realise their important role in protecting and conserving this type of house for future generations, except for **HA2** and **HA5**. **HA2** expressed that she did not care about the house, while **HA5** preferred to spend her money on repairing religious buildings (*Surau*) than her own house.

The caretaker living in house **HB1** stated that she was very concerned about the house. She claimed that,

*'We know the value of the house, we prefer to stay here instead of in our new modern house (Rumah Mesra Rakyat), and we want to take care of this house and protect it from damage although we are not the owners. We're just the caretakers of this house because the owner allows us to stay. The owner lives outside the village in another region and has already bought another new house in Kuala Lumpur.'*

In addition,

*'We can extend the house whatever we want because we can afford that (high status of the owner) but we prefer not to do it because we love the old house.'*

This statement made by **HB1** illustrates her passion for protecting and taking care of the heritage house. Besides that, she also expressed that their children prefer to live in this house than in their own house. On the other hand, **HB2** pointed out that this house has already become a reference for a student who wants to learn about the NSTMHs. Not only that, the location of this house is also very strategic as a tourist attraction. **HB2** added that,

*'As caretakers and occupants, this is our shaded place according to our ability. If one day, I cannot afford it, I might dismantle the house and build a small house at the back because I cannot afford to change the leaky zinc roof.'*

In addition,

*'I would never lose anything if this house was not here anymore but the people who are interested in this field will be affected.'*

According to him, the house was rented out before he moved in. Not doing that made him afraid that the house would have suffered seriously decay.

The owners in both **Categories A** and **B** agreed on this issue, and those in **Category C** were no exception. Both of the owners in this category claimed to understand the value of the house and the need to take care of it for future generations, if at all possible. **HC2** seemed to know the function of the low main front door and the low window in the *Serambi* area. As for **HC1**, she realised that the extension part at the back of the house was being attacked by termites due to the use of unsuitable timber (low quality) compared to the original timber used in the *Serambi* and *Rumah Ibu* areas.

The house owners under **Category D** gave different views on how they valued their houses. According to **HD1**,

*'If the house was given to me, the house would be in good condition.'*

This house is valuable, added **HD1**. There were people interested in buying the house at MYR8,000.00 (£1,500.00) but the owner refused. **HD1** had already told the house owner to look after the house as the house owner had many children and was reluctant to do so. According to **HD1**,

*'If you don't want to sell, why don't you look after the house yourself?'*

In contrast, according to **HD4**, not only were they not interested in the house and the heritage but their children were not interested either.

Their basic understanding and how they value the houses determines the level of awareness amongst the house owners. Not only that, the technical aspects of the construction type also reflect that all of the house owners (Categories A, B, C and D) seemed to understand that the system of jointing without nails was called *tanggam*. The houses are made from a good-quality timber called *Penak* (local-*Ponak*) or *Chengal* (section 2.5.5). They also appreciate the past technology, especially in regard to techniques such as the adjustable windows and carvings for ventilation purposes, which were applied more than 100 years ago, as mentioned by **HA8**. Particular shapes like the octagonal columns represent the status of the owner (section 2.4.1) as well, added **HA8**. This appearance can be identified externally (elevation) without entering the house. She also explained how the timber had been processed from a raw to an end product. The timber comes in one long piece (one tree) from the forest and is brought to the site along the river before it is erected with *pasak* (pegs) and *baji* (wedges), added **HB1**. Not all of the house owners were familiar with the construction of the TMH, including **HA9**.

The current condition of the houses represents how the owners look after their properties. It is not surprising that all of them had been altered from their original condition and various types of extension (architecture) had been added. The owners agreed this meant the houses had lost their character as well as their value. None of them specifically respected the original fabric typologically because most had a modern extension, in particular to rebuild the *Rumah Dapur* (kitchen) on the ground

rather than on stilts. Most of them realised the poor condition of their houses and could not maintain them due to financial constraints. As stated by **HA6**,

*‘Just let it be.’*

**HB1 and HB2** claimed that the structure of the house was still in good condition and not skewed, although the timber had been attacked by termites, added **HB1**. As a caretaker looking after the house, **HC2** explained that the house had just been refurbished with many improvements in May 2013. **HC1** claimed that the condition of the *Rumah Dapur* was good but he had decided to demolish it in order to create a bigger space on the ground. The extension of the new *Rumah Dapur* is half timber and half brick but the timber has been attacked by termites, so they are planning to repair it as soon as possible. The current condition of the houses differed from one owner to another. For example, in **Category D**, most of the houses were abandoned and in worse condition. Only two of the houses, *Rumah Tukang Kahar* (**HD5**) and *Rumah Maimunah Yaakub* (**HD9**), had been dismantled and relocated to another place. One had been converted into a gallery (**HD5**) near the Old Palace of Seri Menanti, Kuala Pilah (National Heritage) and one into a guest house (**HD9**) at *Sekolah Tinggi Islam As Sofa*, (As Sofa Islamic High School) Rembau.

The maintenance aspect of the houses could be clearly seen on site when the interviews were conducted. Some of the house owners realised that to repair their house would be costly because timber is expensive; this was stated by **HA1**. At the same time, to get a traditional *Tukang* (carpenter) is quite difficult, he added. **HA3** mentioned that it is easy to maintain the house because she lives alone but this was not the case for **HA7**. **HA7** stated that the addition of a huge porch attached to the Serambi area, due to rain spatters and heat, had affected the underneath space of the house, which had been converted into a new space (below the Serambi area that had become a two-storey house). In addition, **HA8** stated that they were able to maintain the house themselves where possible and that they were very positive about using modern materials, especially for the roof because the original roof (*atap nipah*-palm leaves) was prone to fire. On the other hand, **HA5** stressed that,

*‘Adoiii...it is hard to say.’*

She realised that the extension of the house was the worst part. It had been attacked by termites due to the low quality of the timber used compared to the original house.

According to **HB1**, although the timber was attacked by termites, she identified it as not being an urgent consideration. There is no problem taking care of the house, added **HB1** and **HB2**, but it has become a burden due to budget constraints. **HB2** stated that he could not afford it.

As caretakers, they agreed that it is not difficult to take care of this type of house. It just needs to be cleaned up regularly, added **HC1**. And do not do anything that is not good for the house, added **HC2**. According to **HC2**, the refurbishment of the house was a collective effort among his siblings in terms of finance.

**HD1** mentioned that she is not able to look after the house any more due to her age and she cannot afford to pay the electricity bill. **HD5** pointed out that they would not be looking after it because their house is being used as a shed for cows. Even the staircase had collapsed as a result of this. Not only that, it took about two hours for them to come and clean the house and it was not worth it, claimed **HD5**. Due to her commitment teaching in Serdang, **HD5** hardly had time to travel every week or every month just to clean up the house. In contrast, **HD4** stressed that they will never repair the house because they are not living there. They have their own (modern) house built at the back of the old TMH.

One of the findings that was expected regarded the heritage legislation. It is not surprising that all of the house owners (A, B, C, D) claimed that they had never heard about the existence of the National Heritage Act 2005. They did not know anything about it and the interviews were the first time they had heard of it. They all believed that it was the role of the *Ketua Kampung* to inform the villagers about it, otherwise they might not come to see its relevance, as added **HA8**.

### 5.3.2 Heritage Appreciation

This theme will help to reveal the house owners' appreciation of the heritage aspect of their houses and the importance of their own role. The owners' backgrounds and knowledge differed with regard to how they perceived this issue, depending on whether they were house owners, caretakers and so forth. At a certain point, they shared a similar perception regarding appreciation of the heritage.

All of the house owners agreed that the NSTMHs are worth conserving as important parts of heritage, especially for future generations. Financial constraints and their low income were the main reasons given as to why most of the NSTMHs were left unmaintained and in a poor state of repair, as claimed by most of the house owners (**HA1, HA4, HA5, HA6, HA8, HB2, HD5**). According to **HA1, HA5, HA7, HA8, HA9, HB2** and **HD5**, they really need financial support from the government. Besides that, **HA1, HB2, HC2**, and **HD4** claimed that a museum officer had already visited them and discussed the houses but no action had been taken since that time. Approaching the state government personally did not mean you would get what you want, as experienced by **HB2** and **HC2**. In certain cases, like **HB2**, although he felt frustrated with the government, he preferred to collaborate with them to convert his house into a homestay. According to **HB2**, he agreed for the house to be converted back to its original design, including the landscape. On the other hand, **HC2** did not agree with this approach. A different approach was taken by other house owners like **HA5**, who wanted to donate her money to religious activities. But **HA6** wanted to save her money for something else because she was too old and felt it was not worth spending the money on the house. Others might take different initiatives, as **HB2** mentioned. He stated that he needed to change the roof immediately, which cost about MYR 10,000.00 (£1,800), but he could not afford it. The priority for the work differed according to the owner's economic background. According to **HB2**,

*'If I found MYR 3 million under the house, I would build a new modern brick house.'*

Although the main priority should be given to repairing the roof, this might change drastically if they had more money. Not only are they reluctant to conserve the houses but they try to challenge the issue and overcome this problem by proving that they can do anything they want as opposed to what they are supposed to do. This is the reality and how they appreciate this heritage.

According to **HA5** and **HA8**, they are willing to allow somebody (e.g. a museum) to preserve and maintain their house, while they just act as a caretaker. The important thing is that the ownership still remains with the house owner and they would be unwilling to sell their houses in any circumstances. Moreover, **HA8** suggested that,

*'If possible, Mr Sabere, please take care of our house.'*

Another approach was suggested by **HA1**, that they are willing to build a new house near the original TMH, to allow for conservation works (reconstruction of *Rumah Dapur*) and to retain the original design of the house, which has been converted into a gallery (personal heritage collection) as a tourist attraction. An example closer to the Malay Living Museum is Villa Sentosa, *Kampung Morten*, Melaka. If the house cannot be saved, **HA1** is afraid it will be demolished and a modern low-cost affordable house called a '*Rumah Mesra Rakyat*' built there instead, offering minimal monthly payment instalments, as has happened with most of their neighbours, added **HA1**.

Most of the owners were old women who prefer to stay in their own houses rather than go to their children's houses in the city centre. The sense of belonging and memory is very strong, as expressed by **HA2**. That is why they prefer the NSTMHs as they are more comfortable than modern houses. This was also supported by **HA6**. Another approach is living in the house, as **HB1** does now. She has taken good care of protecting the house and at the same time helping to conserve it. She does this because she does not want the same thing to happen as when it was left abandoned for almost eight years after her mother passed away, prior to her moving in after getting married. According to **HB1**, the house owner does not want to live in this house as they are

already committed in Kuala Lumpur. As a caretaker, **HB1** stressed that she would look after the house as her own house. She pointed out that,

*'If the owner does not want to stay in this house, I will stay in this house forever without demolishing it.'*

Moreover, according to **HC2**, the young generation is not interested in living in '*Rumah Atas*' or in a house on stilts and they prefer '*Rumah Bawah*' or 'landed' houses. This is why most of the cases can be seen in the *kampung* area. There are various reasons as to why the young generation perceive the NSTMH in the way they do, especially when most of the respondents mentioned that their own children are not interested in looking after the houses. There is a lack of appreciation by the house owners but not the caretakers, as was the case for **HB1**. She would prefer for the young generation to look after the house after she dies. Although there are some people who approach her to buy the old timber, she has refused because she believes that the house is important.

Furthermore, they never realised the impact on the original house of carrying out an extension. **HC1** explained that there had been some effort to change the decorative carving elements (birds) (on top of the windows in the *Serambi* area) to glass and they decided not to touch the original design and to leave it as it is. The good thing is that during the holiday (school or Eid celebration), the house is glorious when everybody comes back and gets together. Not only that, they also wanted to enjoy the scenery of the village environment, which they could never do at their house in the town area, added **HC1**. She mentioned that there would be a refurbishment soon (extension area) and stressed that they still wanted to keep the original *Serambi* and *Rumah Ibu*. It represents the beautiful works of their late grandparent and is a reference for their future grandchild, added **HC1**.

Another factor is the issue of demolition of the house. According to **HC2**, he would feel sad if the house was demolished. His sister (not the owner) proposed demolishing it and building a new modern house. They refused to do so due to advice they received from the '*Ulama*' (religious person).



From other perspectives, the attitudes of the house owners described how they perceived the future of their houses. As mentioned by **HD5**, she felt glad to sell the house because the house would be taken care of after being converted into a gallery by the museum. Although she regretted her little knowledge of heritage, as long as the house was well looked after, it did not matter, added **HD5**. That is why the house was sold. This also happened to **HD9**. They are reluctant to live in the house as they are no longer there due to current commitments in another region.

The lack of appreciation for heritage by the house owners was shown in many ways. One of the house owners who was totally uninterested in their NSTMH and its heritage was **HD4**. They claimed they would never do anything to the house and would simply leave it as it was. They knew how special the house was with its decorative suspended columns (*buah butun*), but they still could not appreciate that. According to **HD4**, the cost of repairing the house was high as it was in a poor condition. The house was skewed and close to collapse. No action had been taken to either sell or demolish it. They mentioned that their mother had proposed selling the house instead of looking after it but they had refused. They realised that if the house was very well looked after, then it would be easy to maintain, but even if it was in good condition, they still would not favour living there, preferring a landed house (modern) as they do now. In reality, the money is not their main problem as they have a good business. They also do not believe in any taboos. Besides that, there are some people who are interested in buying the house, especially the special suspended columns of *buah butun*, which had the potential to be used in their chalet project in Terengganu, but they have refused to sell these either, added **HD4**.

All of the scenarios show the younger generation's attitude nowadays and why all of the changes are out of control and lead to a deterioration in the condition of the houses. Not only that, **HA5** also claimed that her house would eventually be abandoned because nobody seemed willing to take care of it as they already had their own houses. **HA8** realised that they needed to advise their children about handing over the house to them as soon as possible, before it was too late. The process will take a longer time, including the need to change their names, she added.

There are two cases (**HA4** and **HA9**) where there were no daughters to inherit the house, but according to *Adat Perpatih*, they can leave it to their sister's daughter. **HA9** stated that the matrilineal system of *Adat Perpatih* is significant for women who are left by their husbands. Even if they have split or divorced, they still have the house and land at their *kampung* to continue with their life and not end up homeless. This issue of ownership is still pending for some house owners because the process takes a longer time to be settled.

When discussing the conservation approach at *kampung* level, **HA8** pointed out that the villagers might be interested but felt that only those houses with significant value attached to them should be considered and selected. Nowadays, most of the houses are new and in this *kampung*, there are only three old TMHs left, including his, which is more than 100 years old, he added. According to him, the government might not help to save all of the houses. It might be a selection of TMHs that are more than 100 years old and these should be selected together with the *Ketua Kampung*, he added. Although he had a preference for using modern roofing material, **HA8** refused to use red zinc sheets due to their not being suitable for NSTMHs. There is no conservation effort in this *kampung* as a whole, he added.

In the end, to enhance knowledge of heritage, all the house owners agreed that a manual or principles and good practice to help them conserve their NSTMH is a useful idea. The only different perception was from **HD4**, who was not sure it would be of use due to them not planning on ever living in the house again in the future.

### **Key Observations**

Difficulty in understanding the question being posed became a barrier to the researcher gaining more detailed explanations from house owners due to their hearing problems and the fact that age had clouded their memories of past experiences. From analysis of the findings against the categories of the house owners of the NSTMH, various perceptions become evident towards the understanding, awareness, appreciation and challenges regarding the conservation of the house. This serves to highlight the reasons behind what had happened and the current state of their houses.

Although some of the house owners understand their houses, they were unable to relate this understanding to aspects of conservation. From what has been discussed earlier, it shows little knowledge and a lack of awareness and appreciation, not only amongst them, but amongst their heirs as well. Passing the knowledge to young generations is also part of the challenge to conservation of the NSTMHs. This is an important factor that will determine the future of the houses. This especially includes changes made to the original houses, how they value their houses and the maintenance of them. Not only have they totally misunderstood the typology of the house, but also the basic characteristics of the NSTMH's architecture, which they identified as *Minangkabau*.

Education in heritage is considered critical in this context when the evidence on site shows an actual scenario of the changes being made. It involves terms like form, function and fabric and all changes related to the owners' needs and to suit their budget. It is also based on the availability of materials and construction techniques employed or available in the *kampung* at that time. It is also difficult nowadays to find *Tukang* with traditional skills in the *kampung*. These are the reasons why conservation at the *kampung* level has relationship with the the *Ketua Kampung* (head of the kampung) as a main player. The *Ketua Kampung* represents the villagers and is expected to share the spirit of the National Heritage Act with them, so that they will become aware of conservation activities related not only to their houses but also to the whole *kampung*. This kind of approach does not currently fall within the *Ketua Kampung*'s priority actions and was not highlighted and discussed with the villagers.

Furthermore, most of the house owners wanted the government to support the maintenance of their houses because they could not afford to do so on their own. Money is the main problem in this context and it is quite difficult to help conserve the houses without a steady stream of finance. They also feel uncertainty about the future of the houses, the very existence of which they cannot guarantee one they themselves as owners are no longer around. Some house owners take for granted what they already have and were unable (or unwilling) to see the importance of their houses, either now or into the future. They were also not aware of the existence of the NHA. Although the appreciation of heritage was low, the fact that some of the house owners agreed to

have a TMH manual to provide some guidance on how to protect and conserve this heritage was a good starting point.

From the explanation above, not everybody had a good understanding and clearly mentioned about ‘place’ where at the end of the day, their action sometimes led to the loss of sense of place. This will be discussed further in Chapter 8.

#### **5.4 Background of the Experts**

A total of 25 experts were interviewed but only 18 provided feedback on the challenges facing conservation of the TMH. Seven did not directly answer the question being asked. Most of the experts came from different backgrounds of knowledge and expertise within the conservation field (architect, conservator, academic, official, contractor, timber expert), but they did all share collective ideas on the issue (Table 5.2). Their ideas were mostly reflected through their personal experiences within this field of conservation, especially with regard to the vernacular architecture of a TMH in general.

Table 5.2: The detail backgrounds of the experts

NO.	THE EXPERTS	CODE
1.	Architect/ Heritage Conservation Committee- Malaysian Institute of Architects	E1
2.	Architect/ ICOMOS Committee Member/ Heritage Conservation Committee- Malaysian Institute of Architects	E2
3.	Conservation Architect (Melaka)	E3
4.	Architect ICOMOS Committee Member/ Heritage Conservation Committee- Malaysian Institute of Architects	E4
5.	Academic (Universiti Putra Malaysia (UPM) / Director of Malay Heritage Museum) -non architectural background	E5
6.	Architect/ Academic (Universiti Kebangsaan Malaysia) - Empayar Perunding Multi-Discipline Consultant	E6
7.	Academic (Universiti Sains Malaysia) / Seconded to the National Heritage Department as Deputy of Commissioner: 2009-2012	E7
8.	Academic (Universiti Teknologi Malaysia (UTM) / Director of Center for the Study of Built Environment on the Malay World (KALAM)	E8
9.	Academic / Deputy Director of Institute Sultan Iskandar Universiti Teknologi Malaysia	E9
10.	Academic /International Islamic University Malaysia (UIA)	E10
11.	Academic/ Architect/ Writer/ Encyclopaedist Infrastructure University, Kuala Lumpur (IUKL)	E11
12.	Academic (Polytechnic, Port Dickson, Negeri Sembilan) (PolyPD)	E12
13.	Conservator -Anjung Teknik (Melaka)	E13
14.	Conservator/ Contractor-NTQT Sdn. Bhd. (Melaka)	E14
15.	Director of Negeri Sembilan Museum	E15
16.	Melaka Museum Corporation (PERZIM)	E16
17.	Heritage Officer, National Heritage Department (NHD)	E17
18.	Senior Research Officer, Timber Engineering Laboratory, Forest Research Institute Malaysia (FRIM)	E18
19.	Senior Research Officer, Timber Preservation Analysis Laboratory, Forest Research Institute Malaysia (FRIM)	E19
20.	Pensioner- Senior Research Officer, Timber Preservation Analysis Laboratory, Forest Research Institute Malaysia (FRIM)	E20
21.	Chief Assistant Secretary, Negeri Sembilan State Government	E21
22.	Chief Assistant District Office, Kuala Pilah District & Land Office	E22
23.	Director, National Occupational Skills Standard (NOSS), Department of Skills Development	E23
24.	<i>Ketua Kampung</i> Kuala Pilah (Head of <i>Kampung</i> )	E24
25.	<i>Ketua Kampung</i> Rembau (Head of <i>Kampung</i> )	E25

A similar approach to that employed for the house owners was also applied in analysing the experts' views towards the challenges in the conservation of the NSTMH in particular and the TMH in general using thematic analysis. By using a semi-structured interview guide, all the data were gathered and coded into several themes that reflected the overall idea, issue and context.

In this context, the experts were also purposely chosen as purposive sampling. Some snowball sampling was also applied where relevant, as explained in Chapter 4.

As Negeri Sembilan had very limited conservation experts, especially in the vernacular of the NSTMH and Malaysia in general, respondents were identified from their personal experiences in regard to the protection and conservation of the TMH.

There was a form of hierarchy of levels covered, from federal, to state and local experts, as explained in Chapter 4.

## **5.5 Responses from the Experts**

The human factor was identified as the most significant factor which reflects all of the below themes. It is all about people's mindset and how they deal with their heritage. Although this issue was seen from the eyes of the experts in this field, it was also supported by the evidence of witnesses during the fieldwork conducted specifically in the region of Negeri Sembilan. It was not merely a list of NSTMHs that was surveyed, other states in Malaysia face a similar issue and yet there is an apparent lack of care in regard to the problem. According to **E8**, '*It is not a Negeri Sembilan's problem only, but is a National problem!*' In the first place, that is why there is a need to do this research, to understand, identify and investigate this issue in regard to finding a better solution to saving Negeri Sembilan heritage in particular and Malaysia's heritage more generally before it is gone.

The findings of the experts' views were gathered through an exploration of the challenges of conservation of the TMH and were divided into several themes such as Conservation Challenges, Experiences, The Importance of Understanding and Legislation Context.

### **5.5.1 Conservation Challenges**

In this section, the findings were explained and grouped into several concepts such as:

- Lack of Awareness, Appreciation of Heritage and Changes to House form
- Lack of Government Support, Special Budget and Maintenance Routine
- Lack of Materials and Traditional Skills
- Insufficient Documentation

### **Lack of Awareness, Appreciation of Heritage and Changes to House form**

This concept was the most frequent answer given by the experts, and reflects the lack of awareness amongst the new generation to appreciating heritage. The issue of abandonment of traditional houses, especially in rural areas (*kampung*), had begun to take hold during the early part of the 1900s. The issue of conservation of the TMH had been highlighted by Mubin Sheppard since the 1950s, when he became the British Advisor to Negeri Sembilan state. He began the discovery and was responsible for the first timber building being conserved. It was a ruin and had been vacant since 1930. It was known as Ampang Tinggi Old Palace (built in 1865) and was later converted to a state museum. In a later paper, *Towards National Identity in Architecture*, written in 1981 and translated by Ali (2010), Ali stated that:

*'Unfortunately, almost all traditional Malay buildings more than 100 years old have been dismantled. In the last 25 years, many historical and beautiful timber buildings have been dismantled by their owners and no one is taking action to save them. Therefore, this country has suffered such a great deal of loss' (p. 86).*

From the interview data gathered during the fieldwork, which was conducted in various locations and regions, most of the experts were in agreement with the statement that the abandonment of houses is nowadays becoming a crucial issue in terms of societal change and changes to the social fabric and culture of the Malay community and their perceptions towards conserving this heritage. According to **E2**, it is all about 'our' (the Malays') attitude and mentality. They do not have strong sentiments about their historical background, tradition and heritage outside a loose sense of belonging to their own places. People intended to demolish houses without any consideration for the future impact. He, in addition to **E1**, **E5**, **E11** and **E13**, claimed that the biggest challenge is lack of awareness and sense of appreciation of heritage amongst the owners, including the young generation. The young generation was not interested because they have no passion for heritage. They never appreciate what has been done by previous generations and the uniqueness of this intelligent architecture developed with traditional skills, the origins of which nobody was aware. This is the evidence and witnesses of the civilisation of the Malays in the past, stressed **E6**.

This uniqueness was also claimed by **E6** (interview on 8/7/2014) through his experience with similar typologies outside Malaysia. He found, for example, houses built on stilts, such as in Nanning, China, Seoul, Korea and in Darwin, Brisbane and Perth, Australia, which have a different system and are not compatible with the Malay architecture. During a recent seminar, **E6** asked a participant from Australia, '*how did you get the idea of building your house on stilts?*' and the reply was, '*we learnt from the Malays*'. This shows that we share the same climatic characteristics (hot and wet) that make it appropriate for houses to be built on stilts. **E6** also said that although they adopt a similar approach, it is not as good as the *tanggam* system in Tanah Melayu (Malay Land).

However, this valuable information is seldom heard and, especially, is being withheld from the young generation of Malays. Not only is the Malays' influence in the area increasingly being forgotten, but matters relating to the history and their origins are generally nowadays not taken seriously by the Malay community. This lack of awareness of and appreciation for heritage began when the older generation of owners passed away. Their children went on to inherit the houses but these children typically did not care about them. This was one of the reasons why houses began to be left abandoned. Besides this, the younger generation have no desire to live in these houses as they have no interest in them and also demand new ways of life. Most of them have already forged good careers in the city, migrated away and left the old TMH abandoned. This was agreed by **E11** that they do not appreciate the historical values as one of the important things to be protected. It is all about attitudes, where people simply said '*let it be*', even when the house was on the verge of collapse, and give one-hundred-per-cent acceptance to the modern style of living with no regard to conserving the old house. **E11** also argued that many architects were also not sensitive about conservation, often ignoring the old houses and building new ones.

According to **E5**, it is difficult for the young generation to survive in the *kampung* area. Instead, they seek a modern daily lifestyle in which they are able to obtain everything they need in a town area instead of having to rely solely on undertaking work in the *kampung* such as rubber tapping and farming. These forms of work do not provide adequate incomes for them to survive. Previous generations were



surrounded by the environment, which accommodated them in any aspect of daily life (they had a house with a large orchard producing rubber, palm oil and local fruits) and a river to the front of the house with a paddy field nearby. Everything was located within the area (*kampung*) and close to each other, and people had access to all of the resources they needed at low cost, especially with regard to the material needed to building a TMH. The practicality of the environment gave a context to the social, cultural practices and economic aspects of life and the availability to learn from nature.

Rapid modernisation has been another challenge that has resulted in large-scale migration of the young generation from rural areas to the city. Sometimes this was dependent on the location of the area where there was a need to sacrifice it for a new development. This was what happened to *Kampung Baru* in Kuala Lumpur in contrast to the *Kampung Morten* in Melaka. For **E2**, he prefers each state to have one *kampung* like *Kampung Morten*, but in contrast, **E11** was not in complete agreement as he preferred a *kampung* house to remain within its real, authentic setting, not an artificial *kampung* environment like *Kampung Morten* (Figure 2.25). In the case of *Kampung Baru*, this *kampung* was gazetted in 1900 by the colonial British as a Malay Agricultural Settlement in the heart of the city centre of Kuala Lumpur. The location of this *kampung* was the most valuable land, currently estimated about MYR 1.4 billion. The desire to develop this land become an issue because a lot of things needed to be discussed and there were a lot of different parties involved. Furthermore, this *kampung* does not represent a real *kampung* setting in a rural area where most of the houses remain totally changed and are located very close to one another. Most were rented by people who worked nearby.

A large TMH compound cannot be compared to a new modern development of terraced or semi-detached houses which occupy a relatively smaller area of land. Moreover, most of the traditional houses in Negeri Sembilan, and in Malaysia in general, are rural and as such cannot be subjected to the same guidelines as urban areas, etc. They are under agricultural land status and are considered individual private property.

**E11** stressed that awareness should come not only from the house owners, but also from architects (professionals) and the government because everyone has their own responsibilities. He added that we may not see TMHs for much longer if no serious action is taken immediately. This is our challenge now! He believed that it is not right to expect others to help conserve or maintain our own houses! The owner has to manage it without waiting for or relying on the government to lend a hand. **E9** also noted that the house owner has no interest if they do not receive any benefit from the work or perceive any relevance to themselves. It comes back once again to the human factor that needs to first be resolved before issue of the fabric of the house (section 5.5.3).

Changes to the forms of the house were explained in terms of loss of the house's traditional values, the value of maintaining the original form of the house (i.e. was it perceived to be 'worth it'?) and the architecture of the changes:

(a) Loss of values

It is almost certain that when changes are made to the original fabric of the house, its character becomes compromised or lost. According to **E1**, the beauty of these houses is that the culture itself blends in well with the lifestyle of the owner. In addition, **E13** stressed that this is also part of the game when there is an extension made to the house. The main problem arises when the needs of the house have to be compromised with the new modern-day needs of the owners. This is why most of the *Rumah Dapur* were demolished and new ones built on the ground floor for easy access. All of this took place as a result of the low levels of knowledge of the owners in terms of what was good and bad for the houses. It was also highlighted through the addition of new features such as new Neo-classical columns on the front, side or back of the house, which actually served to completely wreck the houses' ambience and architectural integrity. **E11** mentioned that house owners faced a period of transformation of the houses from a traditional to a modern style without having carried out any evaluation of the impact prior to work being carried out.

(b) Are the houses worth maintaining?

Is it worth maintaining the original form of a house if the house owner does not have the means to afford it? The reality is most do not have the financial means necessary. As stressed by **E5**, we have to preserve the original forms if we wish to know the history of its culture. And the house has to be retained in a certain order. If the order is changed, the history connected to it will be lost. A lot of hard work is required to maintain a house in its original form. Some owners may only retain elements of it for use in a modern context, as stated by **E1**.

(c) Architecture of the changes

The best thing is to follow the context and sometimes, '*we were offered to live in a new modern way of lifestyle which takes time to suit with us*', as stressed by **E1**. This was what happened in one part of an *Orang Asli* (Aborigines) village in Pahang (Figure 5.4) where they extended the house by using their past experiences and built it in a traditional way (space function, architecture and material), he added. In contrast to the Malays, they extended their house outside the context of that of the original TMH (i.e. they incorporated brick and concrete). These various kinds of extension to the houses were never compatible, and were unsympathetic to and impractical for today's needs as stressed by **E9**, **E2** and **E13**. Yet according to **E5**, the NSTMH was designed to be extended, but what was happening now is totally different. The house owner really refused to understand how to extend properly according to the space and layout, form and style of the existing fabric. This is why most of the *Rumah Dapur* were demolished and built on the ground with various eclectic images and characters. For **E13**, all the extensions made recently by the house owner have failed in terms of architecture. This has resulted from limitations to their knowledge which has forced them to accommodate their disparate needs and requirements. From his experience, **E9** claimed that 9 out of 10 extensions were not sympathetic to the existing architecture of the house. He added that the house owners did solely what they considered to be right for them. They may not have considered it important to respect the architecture of the house because they wanted more space. Otherwise, they remained sympathetic to the original house, use the same materials and technology and say no to concrete. An alternative reading of this problem is that if unsympathetic extensions continued to

be made, the *kampung* would cease to be an attraction for tourists because it was the THM's uniqueness that tourists want to see, a house built on stilts, not on the ground, as stated by E2. They have much better buildings built on the ground in their own countries!



Figure 5.4: Part of the extension made in traditional way attached to the modern house.

Source: <http://layang-layang-gua.blogspot.co.uk/2010/12/06/archive.html> [Accessed 10 July 2015]

The NSTMH has its own character which people usually recognise through the shape of the roof. As mentioned by E5, there is something about this that other people cannot see because '*beauty lies in the eyes of the beholder*'. He realised that when the conservation works take place, it is only possible to make very limited changes. We can say that most of the changes made to the original fabric of the TMH represent the period of time in which they were carried out. It is because we see things from different perspectives and have our perceptions regarding the extent to which we understand based on experiences. These ideas also parallel E9's perception of Malay society's thoughts and were essential in terms of the house as a property. According to him, this approach was applied in the eastern part of Malaysia where traditional houses are normally shared and divided between heirs, in contrast with that which is normally practised in Negeri Sembilan, where the whole house (including the compound) is automatically inherited by any female siblings (the eldest or the youngest), as practised through the social system of *Adat Perpatih* (matrilineal).

A lack of education on the part of house owners was also a contributing factor to the problem that led to the various changes to the original design of the form of the

house. They never reflected on the impact of changes made to their house, whether these were good or bad.

### **Lack of Government Support, Budget Constraints and Maintenance**

#### **a) Lack of Government Support**

According to **E5**, it was quite difficult to get funding and support from the government agencies related to heritage. Even the Negeri Sembilan State Government was not particularly interested in the protection and conservation of their traditional houses. According to **E5**, Melaka is a good example of where they have created a special fund to look after their heritage, including TMHs. He also added that it would be better if something could be made available. According to **E12** too, money is the main challenge in this context. There was no funding from the government because they have never seen the value of contributing to the Negeri Sembilan economy.

#### **b) Budget Constraints**

Any conservation work may require a significant amount of money, depending on how well it is managed. It is pointless to continuously invest in maintaining these houses if no one has any intention of living in them, and this was becoming one of the reasons why the Terengganu Malay house was sold to Chinese businessman to adapt as *Terrapuri* resort, as mentioned by **E5**.

As a second-hand material, timber still has its own demand. That is why there is a particular company who only collect, buy and sell old second-hand timber materials purchased part by part in Rembau, Negeri Sembilan. The existence of this company will encourage those villagers with no passion for conserving their houses as the best solution for them to sell their house that would otherwise be left abandoned, instead of maintaining it.

#### **c) Maintenance Routine**

According to **E5** and **E13**, it is quite difficult to maintain a TMH in a tropical climate like that of Malaysia (hot and humid). It needs people who are really interested in

looking after the house with proper care whilst at the same time living in it. If the house is bequeathed to the wrong person, then there is a potential for it to become a burden to that person if it does not fit in with their needs, and therefore also the risk of the house being left abandoned.

A sympathetic owner will look for the best-quality material that is best suited to the house in order to carry out any repair work. If the house were in a bad condition and starting to collapse (e.g. rotting timbers), then major work would be required, otherwise it would only be a case of minimal maintenance, as stressed by **E9**. At a certain point, it may even become a burden, as in the case of the high-status house of *Dato'-Dato'*, which **E2** mentioned was not being kept in good order.

The best way to preserve timber, especially in a traditional context, is to protect it from insects and water, its natural enemies. If both can be avoided, then there is no problem, as stated by **E20**. Most of the experts agreed that new practice now is to use recycled engine oil to protect from termites, which helps reduce the costs to the house owner. Other than that, keep the house dry all the time and avoid any water leakage, especially from the roof. The most important thing to check regularly is contact with the soil or ground to avoid attack by termites. Use dry timber if any replacement is needed, he added.

### **Lack of Materials and Traditional Skills**

#### a) Diminishing resources of local materials

Most of the respondents mentioned that there was no issue of diminishing resources as more than half of the country is still covered with forests. This was not the reason why they used modern materials. In the past, it used to be easy to acquire timber, but it can nowadays prove to be expensive. As mentioned by **E2**, the cost of building a house in the early 1990s was about MYR 250–300,000.00 (£50,000.00) but that figure will nowadays reach about MYR 1.2 million (£220,000.00). According to **E6**, Malaysia is the world's largest producer of (processed) timber and *Chengal* timber can only be found in Malaysia. This *Chengal* was the main timber used in the construction of

NSTMHs. Although there is no issue in this context, there might be an issue of illegal logging taking place elsewhere, as claimed by **E5**. According to timber expert **E20**, if lower stocks are recorded through a survey of the permanent forest estate, a programme of replanting is carried out based on the concept of forest management.

b) Lack of Traditional Skills

Lack of traditional skills was another of the reasons cited as to why people were no longer interested in building TMHs. Furthermore, as mentioned by **E7**, traditional carpenters (*Tukang*) are hard to find and there has been no continuation of the traditional skills of carpentry, especially among the younger generations. This statement was also supported by **E14**, **E2**, **E13**, **E5**, **E11** and **E9** that there were no more traditional *Tukang* and it was not easy to find them. Any that remain tended to be in Kelantan and Terengganu, where, in any case, most were too old. They have not passed on their traditional skills to their children, who may no longer take up traditional carpentry, but rather modern construction or wood carvings only. According to **E6**, nobody was interested in promoting the skill and patrons were busy with other things.

The only traditional skill left was boat making in Terengganu. The Germans had ordered boats from this centre and had declared it to be the best boat craftsmanship in the world, all made by the Malays, added **E6**. This could have been a starting point to document it for future references. Moreover, nowadays, it is not only modern construction that has seen an influx of unskilled yet cheap Indonesian and Bangladeshi workers, but also timber construction as well. Local people were reluctant to become involved in this area of employment, probably because of the low pay.

c) Use of Modern Materials

The use of modern materials has been driven in part by the difficulty in obtaining the skills of a traditional *Tukang*, and modern materials present the only available option: either that or the house would not be repaired. New, modern materials are easy to acquire and can be cheaper for the same specification, species and properties than carrying out repairs or replacements with the original material. Limited input from the

right people when carrying out repairs is one of the reasons why owners have totally changed the characters of their houses when they replace things with new, more modern materials. They pay little regard to this just so long as the house can be used to live in and the work can be done within budget. The owner's budget plays a major role in determining the type of repairs and extension that can be carried out on the house. Sometimes, even if they have a lot of money, they still do not appreciate the original fabric and just take away everything that does deserve to be conserved. From the surveys carried out, most of the NSTMHs were also changed drastically in terms of their form because of influence from unprofessional contractors or builders, who only wanted the job. According to **E5**, the use of modern materials, such as *Onduline* for the roof, blends in with the character of the NSTMH. The most important thing is it is a maintenance-free material which also acts as insulation.

### **Insufficient Documentation**

Lack of documentation was also part of the challenge in the conservation of the TMH. As stressed by **E11**, insufficient records are kept regarding our buildings. We need to ensure proper documentation is kept and that records are updated as needed, which can then be shared and made available for students, researchers, academics and professionals to use in their projects. This documentation should eventually be centralised in the form of a TMH database. Even when a listed building has been measured, the owner does not get any copy of survey, which they may use if they need to extend properly their house. Moreover, **E10** also noticed that the information was not properly collected and was hard to locate, except in books as a visual aid only. In reality, reference books on these houses are also very limited, especially with regard to the detailing part.

### **5.5.2 Experiences**

Every person or expert had their own experience as either an individual or as part of a group. From the interviews, the findings show that various different experiences were



shared by all the experts, highlighting some approaches that have been adapted and restored. Besides that, some of them combined academia and practice where they can apply theoretical aspects into practical methods.

Based on the data gathered, only eight of the experts (**E5**, **E3**, **E2**, **E14**, **E15**, **E9**, **E6**, **E17**) were involved in conservation of the TMH, with each having different experiences depending on the need of the projects. Two (**E13**, **E14**) were involved in the conservation of a timber mosque. The rest of the respondents were not directly involved in any conservation of timber traditional buildings but were involved in an administrative context, which also forms part of the research.

**E5** was personally involved in securing budget, searching for houses and arranging their relocation and had completed restoration projects within a period of nine months. He set up a project under the University Putra Malaysia budget which aimed to set up a series of TMHs in the Malay Heritage Museum's compound. As a museum director, he also purposely mentioned that the main aim of the project was to provide students with the opportunity to learn about and have direct on-site exposure to the TMH. So far, five TMHs (Negeri Sembilan, Perak, Terengganu, Pahang and Selangor) have been restored and visited by various universities, including Universiti Islam Antarabangsa, Universiti Kebangsaan Malaysia and Infrastructure University Kuala Lumpur, as part of their academic syllabus. These houses were chosen because all had a historical significance that represented the importance of the owners' status as well as the architectural value of the houses. All of these houses used a new roof material called *Onduline* (maintenance-free), which gives a traditional look due to its rustic colour. It also acts as insulation. In future, this project will be enhanced by the addition of beautiful landscapes which purposely also offer a great option as a wedding garden, as mentioned by **E5**.

As for **E3**, she had a beautiful experience which gave a new life to the *Rumah Penghulu Abdul Ghani*, Merlimau, Melaka (Figure 5.5) through a conversion approach. This was a federal project which also involved the Melaka state government (Melaka Museum Corporation-PERZIM), although there was a lack of contribution from the federal government towards the end of the process. She also reported, in

addition to this, unnecessary interference from the house owner at all stages, further delaying the conservation process of the house.



Figure 5.5: The conversion approach from house to gallery in the conservation of the *Rumah Penghulu Abdul Ghani*, Melaka. Before conservation (*left*) and after conservation (*right*).

Source: <http://www.heritage.gov.my/index.php/ms/konservasi/konservasi-bangunan/bangunan-tradisional/rumah-penghulu-abdul-ghani>

**E9** also shared his experience in the conservation of *Kota Duyung* in Terengganu. It was a very complex house which had been left deteriorating and in a ruined state. Nothing remained except for the bachelor house and a few walls. The major challenges were to deal with people who had been treating the area as a dumping ground and who had never attempted to understand or appreciate it. Besides this, there was difficulty in finding a missing part of the house that had been taken to a new location by the sibling heirs. These actions were in stark contrast to the Negeri Sembilan tradition whereby the entire house is usually inherited by one person only (the youngest or eldest female). During the conservation process, they also faced difficulty in finding the right species of plant to match the existing ones according to the location (front or back). According to **E9**, a 3D model was used to help explain and communicate with the villagers and neighbours. This house was later converted into a gallery and became one of the famous tourist attractions in Terengganu.

Another experience was shared by **E14**, a contractor cum conservator based in Melaka. He was involved in various types of building conservation, including mosques (timber and bricks) and traditional houses. These included *Rumah Raja Bilah*, Papan, Perak which were conserved but unfortunately left abandoned after being handed back

to the owner. It was a waste of government money. He added that awareness of the need to maintain the houses among society and the house owners was crucial because they were not taking their own initiatives to take care of the house, as *Rumah Raja Bilah* showed. He was also involved in the relocation of *Rumah Tengku Zaharah* from Kelantan to Bangi, Selangor (about 500 km). This project required him to restore the house back to its original condition, a big challenge owing to the fact that the house had been extended many times over. *Rumah Abdullah Hukum*, Kuala Lumpur, is his latest project (interviewed in June 2014), requiring total dismantling along with full supporting documentation. This house was later stored in Rawang, Selangor (40 km away) for about five years prior to being reassembled on top of a new five-storey car park development. This house is a *limas* roof type and belongs to somebody that has a strong historical background with the opening of Kuala Lumpur. At the present time, they merely monitor the condition of the timber every six months in a periodic inspection. This project was quite strange as the historical house needed to be blended with the modern development, although within its own boundary. The new development on this valuable land forced changes to be made to this house within its environmental context.

According to **E2**, there was a plan for 13 TMHs, each one representing a state of Malaysia, to be built as part of a training centre project for the Agricultural Bank. This project is situated in *Perkampungan Budaya Warisan Malaysia* (Heritage, Cultural Village), Shah Alam, Selangor. Due to the changing of the minister, only about six houses were completed as part of the project. **E2** had a very different experience as he built a new ‘traditional’ Malay house in the 1990s where he applied all of the traditional construction techniques without nails. The first three houses (*Rumah Kelantan*, *Rumah Pahang* and an administration building) were built with nails, although applying the traditional methods. Even the Malay contractor involved in this project no longer exists. A new modern approach was only applied to the toilet area in *Rumah Ibu*, which was built using concrete.

**E6** is an academic and consultant and developed 20 principles of traditional Malay architecture before reconstructing the Old Palace of Seri Akar. He claimed that

this building was the last Malay construction prior to it being supplanted with aspects of colonial architecture.

At the NSM, they have five traditional house projects that require monitoring after having been restored and transferred to the museum: *Rumah Tukang Kahar* (Seri Menanti), the Old Palace of Ampang Tinggi and model of NSTMH (Seremban), the new construction of *Teratak Zaaba* (Jempol) and Rembau Museum (Rembau). As a museum director, **E15** mentioned that the owner of *Rumah Tukang Kahar* wanted to build a new house but refused to maintain the old house because they could not afford to do so. There were certain issues when the project started, as the museum was unable to secure sufficient funding to reassemble the house at a new location beside the compound of the Old Palace of Seri Menanti, Negeri Sembilan. This led to later difficulty with the timber, having been incorrectly stored, expanding and contracting following direct exposure to the hot and humid weather, despite the house now being covered by walls and a roof. The house had been destined to become a gallery. Prior to this, **E5** had bought the house, but had to return it to the museum because of its significance as a *Tukang* of the Old Palace of Seri Menanti. In December 2014, the development was still awaiting the appointment of a contractor to reassemble it. All the house structures were stored at the museum's office beside the Old Palace.

The Old Palace of Ampang Tinggi is the first timber building that was conserved by Sir Mubin Sheppard in the 1950s and is now maintained by the state museum. The palm-leaf roof (attap Nipah) has been maintained and replaced every three years. According to **E15**, they will be able to continue maintaining the house using the same materials for another 20 years. The other building is *Teratak Zaaba*, which incorporates a new construction system that maintains the shape of a typical NSTMH (Figure 5.6). This building was equipped with modern facilities such as air conditioning. This approach was contradictory to the function of an NSTMH and demonstrates a lack of understanding by the designer as well as by the client. The state museum was only involved in the planning and implementation stages. This new building is a gallery dedicated to a famous person, Zaaba, who made a significant contribution to education in Negeri Sembilan in the early 1900s. Another building under the care of the state museum is Rembau Museum (Replication of the Palace of

Melewar King). This is a very cumbersome development, with the adaptation of new construction and is totally out of proportion with the typical form of an NSTMH. A lot of new elements such as modern materials have been put in the wrong place and have ruined the appearance of the building. The workmanship of this building is not good either and is quite noticeable both internally and externally (Figure 5.7).



Figure 5.6: The new construction of *Teratak Zaaba*, Bahau, Negeri Sembilan. Air conditioning in the red circles and the *Rumah Dapur* was not supposed to be same/bigger size than the *Rumah Ibu*.  
Source: Author (2014)



Figure 5.7: The new construction of Rembau Museum, Rembau, Negeri Sembilan. The red arrows point to poor workmanship (sticker) and metal decking used as an addition to provide protection from the rain.  
Source: Author (2014)

All of the experts claimed that their projects were successful. As mentioned by **E13** and **E7**, it was easier to deal with a timber building as compared to masonry building because timber is easy to maintain and replace, and does not suffer from salt contamination in the way that masonry buildings do. Most of the related projects were funded from federal resources but some of the levels of funding and allocation were very limited, according to **E17**.

There were various types of involvement depending on their scope of works. Some of the experts (**E2**, **E3**, **E8** and **E13**) were appointed as consultants, but **E5** carries out the work by himself. He very much enjoys his work in researching for the house and the *Tukang*, getting funding as well as arranging transportation to relocate all of the houses. He added that if one is passionate, this will overcome the problem. When dealing with the conservation works, true experts in this field should be appointed, including the contractor who must be familiar with the scope of works, particularly the traditional timber house construction. All the works have to follow the guideline of documentation works from the National Heritage Department (NHD) including the Historical Architectural Building Survey report (HABS 1, HABS 2 and HABS 3) as mentioned by **E17**.

Since the formation of the NHD in 2006, any conservation works should refer to them as the main agency that deals with aspects of conservation. They have statutory powers to control any development in a built heritage environment in Malaysia. But people like **E5** are of the opinion that their help is not required since it will involve money. **E5** would prefer to save the budget and spend it wisely by escaping them. At a certain point, however, even though there is a personal preference involved, we have to obey the rules and regulations, and best practice should be applied in the future with minimal problem and disturbance to the fabrics. Before 2005, conservation works were normally referred to the Department of Museum and Antiquity because at that time only the Antiquity Act was available prior to it being revised into the NHA in 2005.

The level of difficulty in implementing conservation works depends to a degree on the individual. Carrying out the research required for a particular project is the most challenging part, as **E9** explained, because physical evidence on site act as a guide to investigate further about its historical narrative. Decision-making also plays a major role in situations where there is a conflict of interest between the house owner and the patron (decision-maker/client) who will decide on very subjective matters, for example determining the colour of that particular house, as stated by **E3**.

The experience with the house owner depends on the condition of the house. If the house has been left abandoned, there should be no problem in dealing with the

owner, based on what **E9** experienced. This was not the same as the situation experienced by **E3**, however. Although in that case the house owner was not staying in the house, they proved quite difficult to deal with as they never fully understood what was happening to the house. If the owner lives in the house, they already know which part of it leaks during heavy rain or if there is any area of ponding or not. Even though the house owner employed a representative, they were also not much help due to the fact they did not live in the area. According to **E17**, the project of *Rumah Penghulu Abdul Ghani* was also under his supervision (as a federal heritage officer), and he noticed that there were regular conflicts among the family members when the project started. Some of them wanted the government to buy the house and for the money to be divided between them. They had no sense of heritage in their minds at all. These are some real facts about some of the house owners' attitudes when dealing with heritage.

In another scenario, **E5** had a difficult time convincing the owners of houses to make the decision to sell them. A few were willing for him to buy their houses because they wanted to build new ones. The concept of '*seeing is believing*' proved to elicit a good response from the house owners who would invariably change their minds after a visit to a showcase of traditional houses that had been conserved in their *kampung*. **E5** also exhibits his house as part of the *kampung* showcase to the villagers.

From the interviews, no house owner was aware of the changes and threats that might have affected the original fabric of their house, and neither were they at all concerned by the matter. According to **E13**, it is good for the house owners if they have to remove all of the unnecessary extensions when the house is returned to its original form as it reveals the true skin of their house.

If the TMHs were conserved especially to become a learning centre or museum, only the number of visitors would determine how successful the project was, as was the case with UPM where it has been visited from other universities, as stated by **E5**. He also added that he wanted to give a new life to the building only insofar as undertaking maintenance and repairs at a minimal cost, including the transportation of all houses to be relocated. According to **E3**, the success of a project is a reflection of

a good job done by the contractor. During the implementation works of *Rumah Penghulu Abdul Ghani*, they did not consider the maintenance plan in the earlier stage and neither was this highlighted by the NHD, meaning that additional budget therefore had to be found.

The good thing about conservation works is that not only will the house owner benefit but so will visitors to it. This is what has happened in the case of UPM, where students are able to visit and learn about a TMH in detail. According to **E17**, through his experience in conservation projects, some contractors and/or consultants are more motivated by money and are not as passionate about the actual conservation. Some were unable even to produce a Conservation Management Plan (CMP), he added. His department also lacks staff when compared to the number of listed buildings to oversee. The department only oversees buildings gazetted as national heritage, that is, if they are of significant importance at a national level. Not only that, the staff in NHD were not from technical backgrounds, rendering it quite difficult for them to understand some of the technical problems inherent in the heritage buildings. This was a major issue that nobody realised. This statement was agreed upon by **E1**, **E2** and **E13**.

In general, some of the experts noticed that there was no issue regarding budget constraints for their projects. The only issue was around payment, which at times was not always made punctually, especially when it came to government projects where there was too much bureaucracy.

When discussing the issue of guidelines, most of the experts stated that it depended on the scope of their work and the year the project was implemented. They would follow best practice by using guidelines from either the NHA, the Department of Museum and Antiquity or an International Charter. **E5** was the only expert not to make use of any of the guidelines, as he mentioned that as long as he was following the right practice, that was sufficient. He always referred to a website about building conservation and applied the best way to conserve it as long as there was no loss of the building's original identity. Above all, all of the experts were aware of the existence of the NHA and that no local guidelines could be used in their projects.



Despite his personal experience in the conservation of TMHs, **E5** had difficulty in obtaining cooperation from the government agency, notably the NSM. He found that the policy maker was also a problem because when the leader or head of department was not from the same cultural background, especially at national level, it affected the entire direction of the department. Not only that, the state government, especially the Negeri Sembilan state government, do not show any effort to save heritage houses where the NSTMH is part of the Negeri Sembilans' identity. **E5** stressed that this is our true heritage because it represents the Malay civilisation reflected through the architecture of the TMH. **E5** pointed out that the NSM does not have any initiatives regarding this issue and that they were probably not interested in it. Other than that, in line with his very own particular impression of how things should be done, **E5** suggested that the university has a responsibility, especially Universiti Teknologi Malaysia (KALAM) and Universiti Teknologi Mara (KUTAI), who are the bodies dealing with education in the conservation of built heritage. They are academic units and not executives and do not have any direct dealings with conservation. They should play their role not only in producing documentation or measured drawings, but also in conserving heritage buildings, including TMHs in real-life practice.

**E5** also shared a bad experience with the NSM. He is the one who first met the heir of *Tukang Kahar* and bought the house for his projects. In the last conversation he had with the NSM, they stated that the reassembly of *Rumah Tukang Kahar* would probably be completed 'by the end of this year [2014]'. Every year, according to **E5** and **E8**, the state museum focuses only on the *Pesta Persukuan Adat Perpatih* (Adat Perpatih Tribal Festival), which is more about cultural heritage. They should consider the buildings (architecture) as well, which also represent the society of the *Adat Perpatih* that needs to be conserved for future generations, advice that is ignored every year.

Furthermore, when discussing activities and initiatives related to the protection of Negeri Sembilan heritage, **E5** stressed that this is a good question! He mentioned his involvement in this field since 2005. When he personally saw old NSTMHs being so readily destroyed, he approached the government agency, met the museum director and said, '*it is a museum's job to take care and look after them and preserve our*

*heritage*'. There is some argument about whose responsibility it is to look after this heritage. The NSM refused, stating that preserving the houses falls within the responsibility the owners and does not come within their jurisdiction because they do not have any Act to point to. **E5** also asked why if Melaka could do it, why couldn't they? Negeri Sembilan is a different case, he added.

Furthermore, according to **E13**, most of them have their own aims, including NHD and the universities holding data that was not being shared, especially measured drawings. They should enhance the data from the first edition and update them throughout the evolution of the houses right up to the present day. Occasionally, the same works on the same building or monuments were duplicated every year, as they were produced by students from another university. There should be one single body to keep an eye on this issue and monitor it through a central database, so that the impact of the result is more projected and beyond the normal expectation when dealing with the conservation of heritage buildings in Malaysia.

Only **E5** had any future projects to save more NSTMHs by relocating them to the client's site nearby the *kampung*. He refused to install a modern toilet in this house and wanted to maintain the original character as much as possible. If the client refused to accept, then they should ask someone else to the job, he added.

### **5.5.3 The Importance of Understanding**

Understanding was found to be an essential step to be explored in approaching any conservation works, especially those concerning NSTMHs. This section explores the experts' understanding of conservation of the TMH and its setting. This can be explained by several concepts that were generated from the data gathered;

- Heritage Appreciation
- Education (Knowledge)
- Awareness

## Heritage Appreciation

The level of heritage appreciation may differ from one person to another. For some people, preserving any aspect of our history and culture seems appropriate while for some, it is a tedious process. Expert conservators play a major role in assisting the house owner by providing valuable advice, sharing useful knowledge and where possible, finding solutions and offering recommendations. However, in some cases, some owners view the experts as meddling in their private affairs, as experienced by **E5** and **E2**. For example, *'Hey, this is my house... why you want to save my house?'* Owners often regard the experts as outsiders who are unable to grasp the concept of heritage conservation. As a result, efforts made by the specialists were often unappreciated and overlooked by those who do not realise the nature of their work. On the other hand, for some parts of the society that place a value on tradition, they will embrace the important roles of the expert and seek their advice. Being recognised certainly has its advantage, according to **E13** and **E3**, as it helps to build reputation and, most importantly, trust among the owners.

According to **E1**, they try to play their role in saving the heritage, but they have very limited people, and even the NHD staff were not from a technical background, added **E13**. This reflects the actual purpose and responsibilities of protecting heritage, he added. This is supported by **E17** that not only do they have limited staff, but also limited budget too. According to him, only two projects can be put through per year. They were more focused on the gazetted buildings under the NHA 2005 (government building) due to the ease of getting access to the properties.

Sometimes, the importance of a building or place might not be important to the Commissioner of the NHD but is important to the public, said **E1**. This creates an unbalanced decision for the future of heritage buildings. In another instance, he said that the public is likewise not in favour of gazetting their building (for instance, shophouses) as a heritage building, especially in the centre of a city. He added that are too many barriers and challenges listed to obey when building as part of UNESCO's guidelines of do's and don'ts. These applied to Melaka and Georgetown as UNESCO World Heritage Sites.

According to **E5**, the experts do not really play enough of a role to manage this matter. Even **E2** noted that the experts always talk, but if there is no funding they refuse to act. It is also beneficial if the museum people better understand the needs for conservation as well. Not only that, also according to **E2**, but there should have been more efforts undertaken to improve and promote awareness of heritage over the last few years, with clearly not enough having been done in this regard as we are still losing traditional houses at an estimated rate of one per day across Malaysia, he claimed. Nobody cares about this, not even museums, who do not appreciate them and claim they do not possess historical significance to the nation, he added. *‘What happens to the houses of common people? They are also part of the heritage which evolved together. This is then reflected in “our” people mindset!’*, he asserted. This was also well supported by **E17**, who reflected on how we value our heritage and on how seriously we bring this matter forward to be addressed, especially in relation to our own architecture. The difficult thing was to convince the owners to preserve their houses, which was the most challenging and the most significant factor that needed to be tackled.

All of the experts agreed that the only way to save our heritage is to protect and preserve it, because not much of it is left. As stated by **E3**, *‘Of course! From there we had begun, us Malays’*. This kind of architecture is not only unique, but is also the greenest of all types, as claimed by **E11**. All passive design aspects had been incorporated into this type of house a long time ago, he added. Most of the experts claimed that it is important because it is a contemplation of our background, history and heritage, where we come from and how we built and responded to the environment. Besides that, according to **E1**, all the advantages, significance and reflections of the TMHs were an included part of the cultural form of the house, the setting and the context. This was also related to the society and history, as claimed by **E5**. The TMH is the place where we were born and played during childhood. There are memories attached to the house and the *kampung* context to those who possess a sense of belonging to it. The younger generation will not understand because they have never been there, added **E1**.

According to **E5**, the NSTMH has its own ‘time capsule’ (stating the foundation of the house). The time capsule is a ten cent coin put under the *Tiang Seri* of the house, the main and first column to be erected, with a different ‘character’ to that of the other columns (Figure 6.35). The NSTMH is also really significant to reflect ‘our’ identity and culture which represent a different community, he added. Not only that, he also stressed that only this style of house has a *tiang pecah lapan* (octagonal-shaped column) and a *tiang gantung* (suspended column). Other features, according to **E15**, include the *loteng* (attic) which can only be found at the house of higher-status people. The character of the house form will determine the status of the owner, in terms of whether they have open *Serambi (lomp)* or closed *Serambi*, with or without *Anjung* and different carvings. It also includes a specific house form, structural and roof design that should be cherished and preserved for future generations, as noted by **E7**.

Although Negeri Sembilan itself has its own characteristic social system, this was not highlighted as an important feature to attract more tourists, claimed **E3**. Suitable funding should be offered to support this strong character and contribute to local economic growth whilst at the same time conserving this traditional architecture as a tourist attraction and for future generations. She noticed that Negeri Sembilan has less in the way of tourist attractions than Melaka. **E7** stressed that this NSTMH should be granted more attention at the federal as well as at the state level, where it can be gazetted as national heritage. Although this house can be considered heritage because of its age (more than 100 years), the government is not looking into this issue seriously, which reveals an unbalanced focus to its priority, as claimed by **E5**. Even though there is an NHA, it has to be used appropriately and wisely, added **E13**. Sometimes, it is hard to get the time to discuss in detail with the owners, especially when urgent decisions need to be made regarding the project, as mentioned by **E3**.

### **Education (Knowledge)**

Most of the experts agreed that the best way to help the owners is through education. Education is very important to guide and teach them about conservation state and repairs, as stated by **E7**. It needs to liaise directly with them because the house owners

would not come to us, as claimed by **E13**. According to **E7**, we cannot just simply say ‘*hey, look how you repairs here is wrong!*’. It has to be a suitable approach because sometimes their perception about this issue might be unexpected, added **E13**.

The main points of education should be about the importance of the house structure, house form and its order of hierarchy, space planning and layout and also to respect the original condition of the TMH, as claimed by **E1**. He also stressed that hopefully they will pass the knowledge to their children and grandchildren on how to continuously uphold the beauty of our culture and inheritance. This education of transferring knowledge will need more time and explanation and should be continuously performed. According to **E13**, the most important matter is not only to preserve the houses of VIPs (*Dato*’) but also those belonging to common people. They only need some account of why they should maintain their house in an honest shape and what the benefits of this would be. With that, they will hopefully understand their roles in conserving TMHs and of the future benefits also, he added.

Everyone knows that the TMHs are private property; we cannot simply force owners to change or follow our instructions regarding do’s and don’ts. It has to be a process of two-way communication where both parties will benefit – a win-win situation. They need support from the government if there is a problem, and need to have demonstrated to them the importance of the role of the owner in this particular matter. Sometimes, rewards may help to make things easier, especially in the maintenance aspect, as mentioned by **E10**.

Education also takes on a major character in this context of appreciating the past people’s knowledge, particularly of the TMH, as stated by **E11**. As for **E10**, at the moment, the heritage, education through producing measured drawings of old buildings became one of the subjects in most of the architectural schools in Malaysia. It is one way to save the past record for future reference, he added. He also mentioned that the record should be evolved and updated, which adds value to the records. The government has to support this initiative because education is important and will take a long time. There was difficulty in sustaining a local postgraduate student conservation course, as stressed by **E9**.

When discussing ways to help house owners understand the need to conserve the heritage and their responsibility, there was no straightforward answer, as stated by **E9**. According to **E3**, passing on the message successfully must be linked to their own priorities. They might want the house to become a hereditary heritage, but their children may not share the same thoughts because they have their own houses in the city, such as in Kuala Lumpur.

According to **E6**, the young generation do not care about the TMHs and that is why there is a need for their integration into the education programme. They will at least learn about local materials, regional identity and the basic principles of traditional Malay architecture, he added. Through his own personal research project, **E5** planned to share the knowledge through documentation such as sketches of houses as future reference.

**E7** stated that *Mini Malaysia* in Melaka is one of the examples of musealization of TMHs that represent the 13 states in Malaysia. This example should be given a broader educational perspective, rather than serve simply as a tourist attraction, as was explained in the collection of experiences in Chapter 3. Some people will prefer to go there in one day, as a tourist you will see all types of TMHs in one place rather than travel the whole country. He disagreed with the concept because he believes such places should be meaningful only when they display the original and authentic fabric, instead of coping and reconstruction.

Educating the house owners depends mostly on their knowledge and their level of preparedness. It will become really hard if they do not understand what is going on because they need support, as was claimed by **E5** and **E13**. According to **E5**, the mass media should play a greater role in establishing the importance of conserving this heritage for the house owner. They need support rather than just receiving advice, added **E10**.

Another suitable approach in educating the house owners is through the mass media, as agreed by **E5**, **E1** and **E11**. According to **E5**, the role of the media is very important because they can help to explain the heritage and history in detail. It should involve the media people as well, especially television, because it is an easy

communication tool which people nowadays are exposed to, together with easy and broad access to the digital technology. **E5** suggested that the first step would be to identify the right channel (with high ratings and free), probably TV3 as the first channel to raise awareness. He likewise added that whether it is currently a private television or not, they do not show our inheritance. The government channel only shows *Hari Ini Dalam Sejarah* (Today in History) for five minutes about what took place on that exceptional day in the past. There are not many programmes on TMHs, as claimed by **E5**. Besides, it might be in the form of a documentary or even a topic that is highlighted as part of a drama or other type of television programme, as expressed by **E11**. He also added that ‘*we are lacking documentary on Traditional Malay House*’ and should be like Japanese people who are proud of their culture. According to **E1**, he watched cartoons with his son about the environment of the old house as a sort of ‘silent education’ for the young generation. Even Malaysian cartoonist *Lat* always highlighted the ‘*kampung boy*’ environment over the last 20 to 30 years, which actually relates back to our memories, he added.

Not only that, the local authority or any government agency should also take their part in educating the public and provide technical advice and know-how for conserving traditional buildings, as claimed by **E7** and **E17**. This access should be made free to the house owner and help them as well as promote their house for tourism purposes, as stated by **E7**. A good reference is the approach undertaken by Historic Scotland in promoting practical conservation with detailed explanation contained in the form of specialist leaflets and technical advice.

In the end, the best way to share good practice between owners is to demonstrate best practice in conservation works to the villagers through leadership by example, claimed **E5**. They might then come to see the potential of protecting the heritage. Secondly, it is good to encourage regular maintenance of the property, added **E1**. Last but not least, attempt to guide them with continuous effort and give more attention when needed, **E17** added.

About the traditional skills involved in the TMH, as a national director for skills development, **E23** proposed the introduction of a special course in the traditional skills



of TMH as part of the National Occupational Skills Standard (NOSS) syllabus. At the moment, they have about 29 sectors (fields) which consist of 348 courses being offered, he added. It is quite hard to find training in traditional skills and most of it has been stopped due to low or non-existent levels of demand in the current market. Now, training in traditional skills will be considered and it is to be hoped that it will be reintroduced under the NOSS, as agreed by **E23**.

There was a similar approach stated by **E11**, whereby he plans to build a heritage village in Kedah and Melaka, while **E12** plans to acquire a piece of land near the Old Palace of Seri Menanti and build all types of NSTMHs as a model.

According to **E7**, another way to approach this is through awareness education tailored to the level of the student. Introducing the importance of heritage during primary school and when at a higher level, students would undertake some training designed especially for vocational or university students. For the professional, he proposed that the Construction Industry Development Board should play its role in providing training for timber works and so on. It has to be two-way communication which provides benefit to the property owners as well, added **E13**.

## **Awareness**

The level of awareness is the main problem, according to most of the experts. According to **E11**, most of the *kampung*'s people are not in favour of living in a traditional house and more and more prefer a modern house. '*We should blame ourselves*,' he added. Even now, the new generation might not understand the *Adat Perpatih*. Their perception might be different because awareness without passion can be as useless as if you cannot afford it, stressed **E15**.

According to **E6**, only some groups of people are aware of this, but many do not care at all. **E17** pointed out that based on NHD's observation, there is an increase in the number of people passionate about heritage, but this is only reflected in certain people from an academic background. Awareness amongst the public is still low and requires continuous effort and monitoring.

From some other angle, **E9** looked not only at awareness on the part of the public but also to that of professionals, such as architects. They have never been trained as conservators or as conservationists, which unfortunately is a universal problem because of the specialist nature of the work. They come from different schools of architecture (modern, contemporary) where conservation is not part of the curriculum. They base their work on whatever knowledge they have and apply it to a low-quality solution. Not many architects are good in conservation practice in Malaysia, he added.

The six points below reflect ways in which awareness of heritage appreciation may be increased and which cover the prioritising of heritage as a main issue, showcasing good practice, establishing a specific heritage unit for the TMH, maximising government roles, promoting a local agenda to involve *Ketua Kampung* and absorbing the spirit of love for the heritage.

a) Prioritise heritage as main issue

The priority works regarding heritage will be looked into in detail with a proper allocated budget every year. Nowadays, heritage takes a back seat because it is not an important issue, as stated by **E1**. Not to mention that the TMH is completely overlooked and is not considered a tourism product.

b) Showcase of good approach

Another way would be through a showcase of good conservation practice and approach, as carried out by **E5** in his *kampung* at Seri Menanti, Kuala Pilah, Negeri Sembilan. The *kampung*'s people already knew about this showcase and, now, the old houses in this area have started to become expensive. This approach was accepted by the local community in this *kampung* as a good starting point.

c) Establish a heritage unit for the TMH

This special unit or body needs to be established in order to safeguard the heritage before it deteriorates, as pointed out by **E9**. This unit should look into this matter, especially in regard to obtaining funding to protect the buildings and at the same time establish an inventory of TMH stock and identify houses suitable for gazetting as

national heritage. This body should have enough grants and be able to visit sites in accordance with the current policy with some priorities, he added.

d) Maximise the role of government

Increase public awareness programme that are promoted by government. Some programmes have already been launched but they are insufficient. For example, the National Museum has carried out an awareness program in relation to the timber frames and doors. Few people attended, however, as people simply do not care, as stressed by **E2**.

e) Promote as a local agenda and involve the *Ketua Kampung*

The conservation agenda is linked directly on a federal (national) level to the state and to the district, and then liaise directly with the head of *kampung* (*Ketua Kampung*). They will monitor the *kampung* development, and so on. As pointed out by **E13**, all the *Jawatankuasa Kemajuan dan Keselamatan Kampung* or Village Development and Security Committee should become seriously involved in the same way as the planners did to promote *Local Agenda 21*. The latter looks like it could be an important local development tool that could be considered later. At the moment, there is no specific agenda of TMH conservation at the *kampung* level, as per interviews with both **E24** and **E25**. The *Ketua Kampung* only brings forward the issue of helping the owner in replacing a house roof if there is a demand and complaint from them. According to **E24**, he prefers to advise the *kampung*'s people to build a new (modern) house instead of repairing the old house, like what he did and lives in currently (Figure 8.4).

f) To absorb the spirit of love for heritage

The most important thing is for people to absorb the sentimental value of their forefather's work in their spirit, which itself is part of the challenge, as claimed by **E3**. It cannot be taught and must be present naturally within people's hearts, she added. They may sometimes decide until when they must keep the house. We have to have high integrity with our spirit for the preservation of this heritage for future generations, if it is indeed to be possible.

Some might agree and some might not because it is such a subjective area, meaning it will reflect on who you are. This TMH has its own owner, and it belongs to someone regardless of whether that someone lives there. They should not be given any extra incentives because that is their own house and they have to look after it themselves, as stated by **E5** and **E11**. If the government is willing to help, any assistance that it provides is unlikely to cover all of the houses because repairs to an old timber traditional house are expensive, **E5** added. Any assistance provided would have to be the subject of certain criteria, such as, for example, houses that are in excess of 100 years old or that are significant in terms of their architecture, layout and planning.

Another point that it is important to highlight is the role of government incentive because it reflects the mentality of the Malays who rely strongly on the government's help and input, as pointed out by **E2**. On the other hand, **E3** mentioned that owners need to remember that incentives may take many different forms. For example, the best way is to motivate house owners to maintain their house as a group, similar to the reward given to a certain *kampung* in the competition for the most beautiful *kampung* homestay that was maintained by the community themselves, mentioned by **E7**. The best example to follow is the Homestay *Kampung Pelegong*, Jempol, which won the best *kampung* in 2014, as stated by **E22**.

#### **5.5.4 Legislation Context**

In this section, conservation of the TMHs is explored in the context of legislation and its implementation from the experts' view. The findings consist of three concepts:

- Current Practice
- Protection
- Lack of Enforcement
- Way forward

## Current Practice

In Malaysia, heritage itself is a very broad topic. The current scenario of conservation practice in Malaysia, especially in the traditional timber house, is far behind that of other countries such as Sweden, Norway and Japan, etc. in preserving their vernacular architecture. The public never considers them as equally important assets and sometimes not relevant in this era, as stated by **E17**. From his experiences, it is paramount to generate skills and create trusted contractors. **E15** mentioned that such an improvement will reflect back on the cost, whether to build a new house and allow the old house to become abandoned. He also added that the NSM will probably conserve only the core house and *Serambi* area (original pattern only) if funding allows. The remainder of the house (modern extension) will be demolished.

According to **E7**, the government, including the NHD, do not class the TMH as a heritage building, and, until now, no effort to repair any timber house has been included in government projects. The government does not even see heritage as a contributor to the economy of Malaysia, he added. **E5** and **E7** also highlighted that most of the people come to appreciate heritage through '*seeing is believing*'. Although the setting of the NHD and NHA 2005 aimed to guarantee a better future for all heritage buildings, there is no balance between the public and private buildings listed. Just five timber houses out of 322 buildings were gazetted as National Heritage (Nov, 2015): The Old Palace of Seri Menanti, Old Palace of *Ampang Tinggi*, an NSTMH model (Negeri Sembilan), *Rumah Penghulu Abdul Ghani* (Melaka) and *Rumah Tele* (Terengganu).

Through his observation, **E1** claimed that the implementation process of a conservation project was not conducted in accordance with proper practice. He added that the conservator should stand alone as a specialist rather than taking orders from the contractor, as was also affirmed by the president of ICOMOS Malaysia. The conservator needs to be independent (provide advice and contribute) and should engage directly with the house owner.

As mentioned by **E2**, there may be a party interested in that conservation of a traditional house, but it will require replacements to be as close as possible to its

original specification. Timber is not a durable material and it might be expensive for house owners to repair the house, meaning of that not many are willing to undertake such work or even to stay on after conservation, as pointed out by **E1**.

As stated by **E5**, if there was greater awareness, many old TMHs would have already been preserved in Negeri Sembilan. The reality is not so. There is not even awareness amongst academics, he added, as they tend to operate more on a theoretical basis (on paper) rather than in a practical sense. **E13** also mentioned the reluctance of the state government to look into this issue seriously.

Not just that, nobody cares about a building that is not gazetted, added **E13**. As he pointed out, if the state government does not receive financial support for the protection of a traditional house, the amount of repair work needing to be carried out will increase as it accumulates due to neglect. He too hinted that other states should follow the example of Melaka, which already has its own '*Tabung Pemeliharaan*' (Preservation Fund). According to **E14**, in terms of the priority of works, it depends on the head of the NHD. If their interest is different and is not inclined towards preserving heritage buildings, it indicates how poorly we treasure our heritage for future generations, he added.

At the present time, most of the municipalities do not possess expertise in the preservation of their old city parts. As a member of the committee of national heritage, **E9** claimed that it is easier to list government buildings rather than private ones. Dealing with private owners takes longer unless the government purchases the building in the interest of the public.

When discussing conserving more than the needs of the user, it has to be balanced and has to be real, as stressed by **E9** and **E2**. It is a case-by-case basis as there is a need to balance the architect or the conservator with the user's rights, added **E9**. **E2** mentioned that negotiating with owners creates a successful project and will keep them from selling their property to recycling shops where they will be given the cheapest price without knowing the value of the quality timber of their house. The shop will then resell the timber at a high cost to people who may desperately need it for repairs, stressed **E2**.

As mentioned by **E13**, the tangible part is the house and we should look at the property first. According to him, only from the property can we discover about the society and the way of life; protect the property and then the user will come along. This was also agreed by **E1**: just preserve the house and then see a more beneficial path to solving the problem of maintaining it, whether this is due to money constraints or user needs. As an expert, professional ethics should be highlighted especially when advising the house owners (technical and social needs) on the very need for conservation works, as stated by **E3**. As for **E5**, when talking about conservation, the needs of the user might be less clear to them so they have to be convinced. Avoid too many discussions that will drag, delay and endanger the condition of the house. According to **E10**, both conservation and user needs were important and have to result in a suitable approach and the right conditions in terms of the geography, history and future use of the house.

Regarding the retention of only specific historic features of the house, most of the experts did not agree at all. Every part of the house should be kept because every element has its own meaning and relationship to the other parts, especially the layout and overall forms, as was agreed by **E1**, **E3**, **E7** and **E13**. The original character of the house will be lost if too many changes are introduced, added **E5**. There has to be an order of hierarchy maintained for each element as every part of the house was designed in relation to a space and layout which reflected the way of life of the house owner as well as the society in the *kampung* setting, **E17** added. It goes beyond the historic significance only, added **E3**, as the unique characteristic of the TMH is also related to its architectural and social values. This can only be seen in the eyes of those who have extra knowledge and are passionate about this form of heritage.

**E9** pointed out that there is one approach that can be adopted to give new life to this house, such is the case with the *Terrapuri* Resorts, Terengganu and Bon Ton Resort, Langkawi (Figure 3.1). Although he said that this approach contradicted international charters, it had turned out to be successful. The history of the building will be lost but at least someone is maintaining it, he added. He too brought up that a miracle needs to happen to conserve the house at its location. **E12** claimed that there was a lack of reference for the NSTMH that needed to be looked into. According to

**E6**, there is a need to upgrade the importance of this house by moving on the idea but taking care not to restrain it through the application of modern construction only.

As one of the forms of tangible heritage in Malaysia, TMHs could benefit from heritage tourism. One way would be to establish a programme of organised homestay or agro-tourism, as stated by **E9**. The uniqueness of this traditional architecture can be used in existing stock networks of homestay, which offer something different to a modern hotel or resort. The house owners still live in the house and will receive and entertain guests. The house would be maintained by the hotel operator, who at the same time would protect the architecture of the house and the context of the *kampung*, he added.

In contrast, as an academic and practitioner, **E6** has taken further initiatives by designing an office that combines the principles of the TMH in modules with the cheapest materials available into a contemporary image. *Menara Obyu* (Point 92), designed by **E6**, was recognised by the *Pertubuhan Arkitek Malaysia* (PAM) and awarded under the category of ‘Commercial High-rise Gold Award’ in the Annual PAM Awards 2014 (Figure 5.8).



Figure 5.8 : The principles of the TMH were applied in the planning, design and layout of the *Menara Obyu* (Point 92) in Petaling Jaya Malaysia

Source: <http://www.starproperty.my/index.php/articles/events/pam-awards-night-2014/>



## Protection

According to feedback from the experts, the only regulation that exists in regard to the protection of built heritage in Malaysia is the NHA 2005. Besides this, any kind of project has to comply with the United Building by Law (UBBL) Act 1984. Most of the experts expressed that the use of NHA depends on the scope of the projects wherever relevant. Although the NHA has been in existence for a period of 10 years, it is not of much help in conserving built heritage, as stated by **E5** and **E13**. Moreover, **E2**, **E5**, **E3** and **E10** pointed out that the existing NHA is not comprehensive enough, is too general and focuses more on an administrative approach than on how to gazette a heritage building. It does not include any specific clause on timber buildings, particularly the TMH, as supported by **E17**. The act also does not guide the user in what is the right way to carry out the work and how we are supposed to conserve in a proper manner, as claimed by **E3** and **E10**. On the other hand, experts like **E13**, **E7** and **E9** claimed that the act is quite comprehensive but that it requires some improvement. According to **E13**, the act is only about authorisation, such as *'This is what I want to do and you listen!'*. **E9** also added that the NHD should be given more continuous briefing to the public so that they might come to understand the content and the spirit of the NHA.

There was an issue raised by **E3** for her Stadthuys's project (colonial building) in Melaka where they have to comply with the BOMBA's (fire service) requirement. The NHD insisted on reminding the architect of this, for example, not to permanently damage the structure (e.g. punch through). According to **E3**, no such thing was stated in the NHA except safety aspect. Sometimes, this created a situation of dilemma; *'which one has to come first, safety or national heritage?'*. This is an example of a problem when there needs to be a balance between decision-making and priority. According to **E15**, the NHA is a new version of the *Akta Benda Purba* 1976 (Antiquities Act) with some improvement (without leaving out the existing content). He stressed that if a certain thing is not stated in the NHA, it automatically falls under the responsibility of the state government, which in turn cannot afford to handle it.

Another reference for conservation works was launched in 2012 in the form of the Guideline in the Conservation of Heritage Buildings (GCHB). This guideline was

meant for the implementation of conservation works of heritage buildings in Malaysia. As for the NHA, it is a national act to protect, safeguard and preserve the tangible and intangible aspects of natural and cultural heritage in Malaysia. Further explanation is provided in Chapter 2 (section 2.10.2) and Chapter 7. It was used by selective people who are interested in and directly involved with this kind of work. It only can be accessed online. However, there is some controversy because people like **E9** do not believe it to be compulsory. As mentioned by **E17**, the NHD is still making some improvement when they should be looking into maintenance aspects in the near future as well. It is good to protect our heritage by having this guideline but it does not make specific mention of how to conserve timber buildings, particularly TMHs, he added.

Besides the NHA and GCHB, closer reference of international conservation guideline used by the experts is the Burra Charter, as mentioned by **E1** and **E13**. They only claimed but not specifically mentioned. This guideline can be used to facilitate a project's need where relevant to the local context, for example, Negeri Sembilan.

### **Lack of Enforcement**

According to a conservator like **E13**, the implementation of preservation works has been quite weak where the NHD has not played a large enough role. As the custodian of heritage, they should fully utilise their roles and power to enforce what has been stated in the NHA, he added. Even in the state of Negeri Sembilan, no such unit or department is looking into this built heritage based on interviews with Negeri Sembilan government officers **E21** and **E22**. They would only discuss NHA at ad hoc meetings about a heritage project according to demand (i.e. on a case-by-case basis), added **E21**. **E22** mentioned that there was no specific task related to preserving the TMH in the context of his district (Kuala Pilah), other than to help the community by carrying out repair work to houses if requested. In addition, this would only be carried out if budget was available, he added. The issue was also reflected in the view of an academic like **E5** who did not see any approach taken by the Negeri Sembilan State Government because the root of the problem remained a lack of awareness. He personally expressed that it is not an easy task to create public awareness to get full cooperation from the relevant parties, such as the museum, NHD and mass media.

Two NSTMHs (Old Palace of *Ampang Tinggi* and the NSTMH model) were protected under the NHA as they were gazetted as heritage buildings. According to **E15**, they followed any instruction and protection advised by the NHD in accordance with the NHA. As Melaka was gazetted as a World Heritage Site in 2008, planning within the gazetted area was still subjected to NHA, CMP, the Melaka Heritage Enactment 1988 and other legislative acts and guidelines that applied to the town centre as well as complying to the requirements of the planning authorities.

### **Way Forward**

The experts mostly work on a project-by-project basis and do not have any long-term strategy or goal in relation to the protection of this heritage. One area is that the top management or patron should avoid the design and build type of tender because some contractors do not understand the nature of conservation projects, as suggested by architect **E3**. They do not make appropriate bids to tender by excluding technical parts such as the dilapidation report and diagnosis of the building, she added. This scenario always happened when the contractor lacked experience in conservation works. **E3** also mentioned that from her experience, the contractor does not know how to optimise funds in terms of prioritising the tasks that need to be carried out for the benefit of the project.

From another perspective, specialist contractor **E14** plans to upgrade the documentation methods by using a 360 Ferro-scanner, which he hopes will allow him to keep all of the information about the building. He also mentioned that in Malaysia, use of this type of technology is not yet very popular because we are still too behind compared to other countries.

Another approach taken by the NSM, which its director, **E15**, mentioned, is to produce a Negeri Sembilan State Act of built heritage which may be used to protect the TMH and also help the house owner. At present, samples have already been compiled of other existing state heritage acts after a discussion with Melaka, Penang, the Department of Museums Malaysia and the NHD. They were advised by the heritage officer from the NHD to use the existing NHA and to adapt it to the local context. According to **E15**, this new act will protect the built heritage of Negeri

Sembilan but he claimed that it is not an urgent demand. It is urgent for the fabrics but will have no effect on people's life. If the act is in action everything will be bound, but if not, all of the traditional houses will perish with uncontrolled development, he added. They also intend to preserve the houses in future as tourist attractions in the form of homestays.

The Port Dickson Polytechnic in Negeri Sembilan has gone one step further compared to others with the establishment in 2010 of the Centre of Technology for *Kajian Alam Warisan Negeri Sembilan* (KAWANS) to protect built heritage in Negeri Sembilan. They collaborated with the state museum to document the NSTMHs, containing more than 60 years of a measured drawing programme. In addition to this, they already had a student exchange programme in place with the Indonesia College to learn about local architecture like Minangkabau. Prior to this, **E12**, as the director of the Centre, had personally approached the state government and museum about this issue (documentation record of the TMH and *Tukang*) to obtain the record for research purposes. However, before this, there had been no response from them. The state government and museum are not looking seriously into this issue and cannot see the value behind it, he claimed. The good thing is that UNESCO accorded them funds to relocate an old NSTMH to the Polytechnic site. They have not yet decided which house will be chosen. Another programme was a collaboration with the UTM and KALAM about promoting the *Minang Diaspora International Symposium* 2014 to cover the history, culture, technology and architecture in tropical climate. The NSM was invited but never turned up, as noted by KALAM director **E8**. As claimed by **E12**, they do not feel it is their responsibility. They prefer to carry out an activity which is more about social-cultural aspects (*Adat Perpatih*) and not related to building. Above all things, all the experts noticed that the government should set aside a special budget as part of a policy to protect and save the TMHs.

Overall, all the experts agreed that it is necessary to have specific conservation principles of the TMH as these were not highlighted in either the NHA or in the GCHB 2012.

The principles, as mentioned by conservation architect **E2**, should be more flexible, to reflect the reality of certain places and circumstances. They are not supposed to be too rigid, added **E13**. Another architect, **E3**, supported this enthusiastically, stressing that, '*Otherwise the house will be demolished and something else built*'. As also pointed out by academic **E9**, we still lack specific principles of conservation for timber houses or a charter for specific buildings in general, and even though the NHA covers everything, it is too general. The principle should act as the backbone of the project, where it holds on every aspect that needs to be guided (as reference) and at the same time acts to determine the best means of implementation in terms of decision-making, as expressed by academic and former deputy heritage commissioner **E7**. This view is also supported by academic **E10**, who stated that maintaining the TMH should be set up like a manual, it would be great to have that. For example, if the house is attacked by termites, what is the best recommendation for dealing with this issue in terms of replacing the materials; what options are there in respect of a certain budget, etc., he added.

Not only that, according to conservator **E13**, the timber joint in this traditional Malay architecture evolves through *Tukang* (joiners) that had personally touched with his brilliant traditional skills that shape and beautify the owner's identity through its scale and proportion. The *Tukang* only works through their memory without using any plan and this expertise should be cultivated, he added. What we can do is create some form of proper guideline. This step ahead will definitely help the owners to maintain their houses and at the same time will save the Malay heritage for future generations, as agreed by **E5** and **E13**.

In Malaysia, although there is an NHA Heritage Act, gazetted in 2005, in addition to the GCHB in 2012, neither highlight a specific approach for dealing with the TMH, even less so in the Negeri Sembilan context. Establishing special conservation principles is meaningful if they can be made flexible enough to suit and reflect the real condition and situation.

## **Key Observations**

Many factors were discussed earlier from the findings of the expert interviews, about the conservation of the NSTMH in particular and the TMH in general. A combination of lack of awareness, lack of appreciation of heritage, lack of government support, lack of maintenance, lack of materials, diminishing of traditional skills and insufficient documentation has led the challenges currently faced in the preservation of this specific local heritage. A balanced solution and way forward from the perspective of government roles and responsibilities to the micro context of the house owners and their houses in order to protect and preserve this heritage. If the country has much in the way of valuable heritage but there is no initiative to properly document it, it is useless and there is no point talking about built heritage conservation.

Starting with a basic understanding of the vernacular architecture of the NSTMH and its settings will contribute to minimise extreme changes made to the house and protect it from abandonment. A lack of appreciation together with little awareness and little in the way of heritage education will have a big impact on the houses. Although lack of materials and diminishing of traditional skills does not mean that the house will automatically fall into a state of disrepair, any effort to preserve it would be useless if no other form of protection were taken first. As many approaches have been attempted by various different experts, there needs to be a more holistic approach in terms of care and maintenance, funding and documentation as well as an integrated management system with regard to any level of protection, either locally (state and district) or nationally. This will be discussed further in Chapter 8.

## **5.6 Chapter Summary**

This chapter has presented the data collection, analysis and key findings for **RO1** in identifying the challenges of the conservation of the NSTMH from the perspectives of house owners and experts. A total of 18 house owner and 25 expert interviews were conducted. Both sets of interviews were analysed using thematic analysis in order to gather views pertaining to **RO1**.

The next section will comprise the data collection, findings and analysis for **RO2** to examine the changing pattern of the form, fabric and function of the NSTMH.





## CHAPTER 6

### EXAMINING THE CHANGING PATTERN OF THE FORM, FABRIC AND FUNCTION OF THE NEGERI SEMBILAN TRADITIONAL MALAY HOUSE (NSTMH)

#### 6.1 Introduction

This chapter examines the changing pattern of the form, fabric, and function of the NSTMH; through the background of the field observation, the overview of the house owners' views of the changes to the NSTMH and analysing of the changing patterns is presented in Table 6.2. Based on the data observed and gathered on site, observation on the cases of the dismantling and reassembly of the NSTMH were further examined to explore the problem and potential related to its conservation.

#### 6.2 Background of the Field Observation

Evaluation of the changing patterns was based on visual observations gathered on site together with drawings of the houses. Internal and external visual observations were conducted following interviews with the house owners. Before any further survey could be undertaken, permission had to be obtained from the house owners. These changes were captured through photographs and sketches of the house plan. Most of the observations were focused on the main typologies of the NSTMH – *Serambi*, *Rumah Ibu* and *Rumah Dapur*.

A proper way to study the changes of these three areas is by using the accepted model of cultural heritage, in which any intervention that addresses these three basic elements (form, fabric and function) must deal with their dominance or balance (Matero, 2006) (Figure 6.1) and include the intangible meanings, beliefs and uses

associated with them. It also sometimes depends on the situation with regard to how to balance the scale of intervention, which might require a different approach and solutions as it involves the reintegration of structural as well as architectural elements (Matero, 2006).

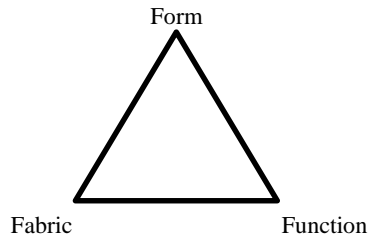


Figure 6.1: Construct model of cultural heritage (adapted from Matero, 2006).

Figure 6.2 indicates the map of the surveyed NSTMHs according to the requirements of the research scope of work. Although a total of 26 NSTMHs were selected for this study, only 17 of these were actually taken into consideration, to observe their changing patterns according to Matero's construct (Figure 6.3). This is because of their ease of access, their condition (i.e. they had not been demolished) and their significance to the study.

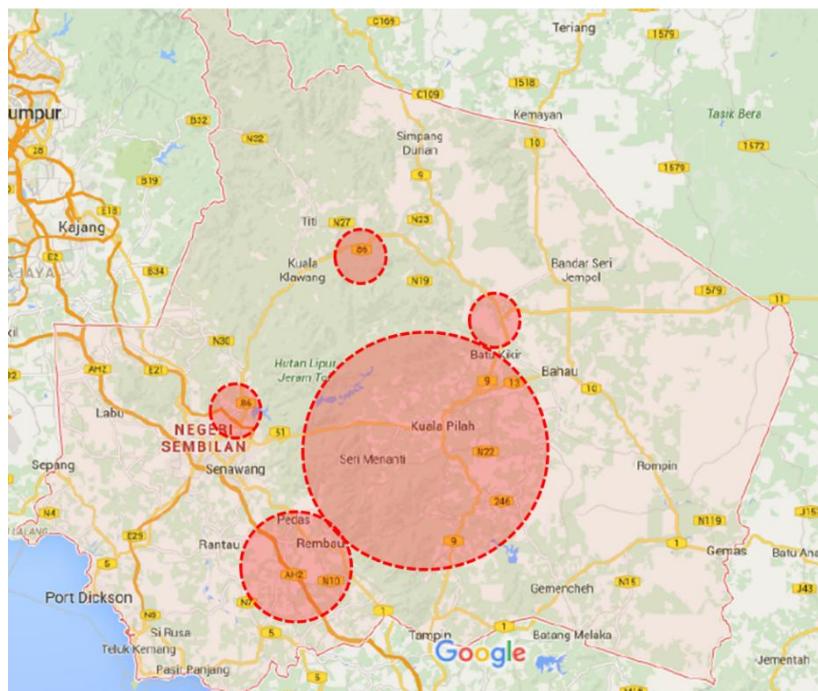
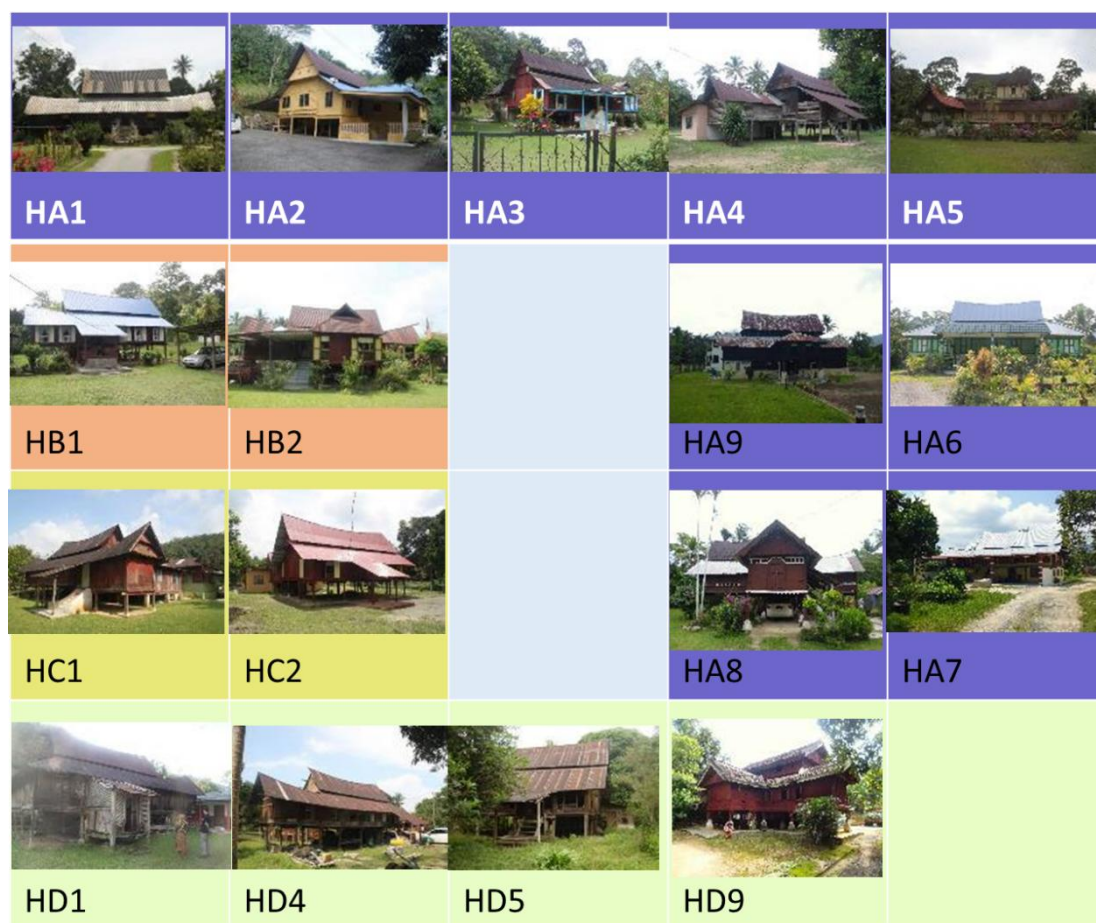


Figure 6.2: The indicator location map of all the NSTMHs surveyed.

Sources: <https://www.google.co.uk/maps/place/Negeri+Sembilan,+Malaysia/>. [Accessed 25/12/2015]



Legend:

<b>Category A (Blue)</b>		<b>Category D (Green)</b>	
<b>(HA1)</b>	<i>Rumah Dato' Laksemama Hajah Bogdad</i>	<b>(HD1)</b>	<i>Rumah Che Tom Sulaiman</i>
<b>(HA2)</b>	<i>Rumah Hajah Maharan Jonad</i>	<b>(HD4)</b>	<i>Rumah Dato' Perba Meon</i>
<b>(HA3)</b>	<i>Rumah Uwan Zunah</i>	<b>(HD5)</b>	<i>Rumah Tukang Kahar</i>
<b>(HA4)</b>	<i>Rumah Dato' Sidin</i>	<b>(HD9)</b>	<i>Rumah Maimunah Yaakub</i>
<b>(HA5)</b>	<i>Rumah Hajah Rafeah Mohd Yusof</i>		
<b>(HA6)</b>	<i>Rumah Pesaka Puan Hasnah Hitam</i>		
<b>(HA7)</b>	<i>Rumah Puan Lamah Hj Saman</i>		
<b>(HA8)</b>	<i>Rumah Norfiah Hassan</i>		
<b>(HA9)</b>	<i>Rumah Dato' Gempa Maharaja Hj Mohd Zakaria</i>		
<b>Category B (Peach)</b>		<b>Category C (Yellow)</b>	
<b>(HB1)</b>	<i>Rumah Hajah Sali Salleh</i>	<b>(HC1)</b>	<i>Rumah Posah Sawal</i>
<b>(HB2)</b>	<i>Rumah Kalsom Sohor</i>	<b>(HC2)</b>	<i>Rumah Hajah Niat Jalil</i>

Figure 6.3: The 17 selected houses were observed out of a total of 26 surveyed, with coding for the analysis of the changing of pattern(s).

Sources: Author (2014)

### 6.3 Overview of the House Owners' Views of the changes to the NSTMHs

In general, the interviews gather the various reasons from the house owners regarding the changes and alterations made to their houses. All of them (categories A, B, C and D) were aware of the changes made and claimed they were necessary to fulfil their current needs. All of the house owners also realised that the changes made affected the character of their houses, but they had already blended these into their daily lives and had become accustomed to them. Some, like **HA5**, realised that they did not care about the changes, which they had overlooked. **HA5** also noticed that the house was full of beautiful colourful artworks that were carved by the *Tukang*, but for ease of maintenance, she chose to simply paint the internal wall and cover them, something which she later came to regret. This experience was also echoed by **HB1** and **HB2**, who realised the impact and implications of the changes that had been made:

*'It looks different.'*

If the space is not partitioned into rooms with a lightweight wall, the whole space appears much more spacious, added **HB1**. This was supported by **HC2** as something that he realised after demolishing the room (wall) at *Serambi Pangkal*. This space (*Serambi* or *Rumah Ibu*) used to be an open-plan layout and many people have added a partition later, making the spaces smaller.

Another thing is that any changes or extensions made to the houses had to be agreed upon with the house owners. **HB1** mentioned, for example,

*'A new extension of the Rumah Dapur (originally this space was not covered by a roof), we painted. We decided to build walls and a roof for safety reasons. The owner allowed us to do that. Any decision to do with the house, we discuss with the owner.'*

In addition, **HC1** pointed out that, as long as the house was occupied, there was no objection from their late mother about the changes. These changes do not relate to the customs and traditions of *Adat Perpatih*, added **HC1**, **HB1**, **HA8** and **HA9**. Some of them realised that they could not change or add *Anjung* to the *Serambi* because

*Anjung* were only meant for high-status people in the *kampung*. This is the only rule they have to obey. The changes also seldom comply with building regulations as they normally use local or Indonesian workers to repair and renovate the houses. No professional was involved in this process, especially in a rural area like the *kampung*. This is why none of the changes could respect the existing fabric at all. All of the house owners stated that the changes did not follow any particular trend in extensions built by their neighbours. It all depended on the budget that suited the owners' needs. Furthermore, all of the house owners stressed that it was quite difficult to find a traditional *Tukang*, which is one of the reasons why they had not repaired or extended the houses according to their original designs. In the end, they used brick and concrete constructions, which are cheap and readily available, instead of using timber.

Changes normally involve the use of new materials, whether these are suitable or not. From interviews and observations on site, all of the houses have used modern materials as replacements. In contrast to the original people in the *kampung*, the current house owners maintain their houses by using materials available in the surrounding area and that are free to obtain. None of the house owners could deny the advantages of original materials such as palm leaves and timber. But this has to suit the current situation, so they use materials that are easy to obtain and are affordable, as claimed by **HA1, HA5, HA3, HA6** and **HA7**. **HB1** stated that, if possible, she is willing to use *rumbia* (palm leaves), the original roof material, but expressed that it is difficult to find this type of material nowadays. Also, there are limited skills to produce this type of roof, as claimed by **HD5**. That is why most of the houses are similar to each other, especially in the use of zinc and metal decking for the roof. In the NSTMH, the roof has a dominant character, and is instantly recognisable.

The use of these materials, however, results in problems: **HA3** claimed that it is hot during the daytime and there is a need for a mechanical fan to cool the space, especially in the *Serambi* area. The roof in this area is very low with regards to the typology of the NSTMH. Some of the house owners put a ceiling in to reduce the heat, which sometimes spoils the internal ambience of the *Serambi*. This has happened to the houses of **HC2, HA6, HA3, HA5, HB2, HA8** and **HC1**. **HB2** claimed that this is not very effective and it has no ventilation. According to him, if anybody were to

inspect the quality (quality control, QC), then the ceiling would most likely fail. Many of these changes are do-it-yourself in nature, so if they were to be formally inspected, they would likely fail for reasons of safety or performance.

Most of the house owners explained that the only times that their original houses are fully occupied is during school holidays and celebrations for the Eid Mubarak festival, once a year. **HA8** admitted that she and her husband rarely used the space in the original house as most of the time they occupied the space on the ground (extension). On the other hand, **HA2**, **HA6**, **HA7** and **HA8** preferred the space on the ground floor because of their age (elderly), easy access and the fact that it is more comfortable.

Another factor that dramatically changes the character of the house is when it is relocated somewhere else, as happened to *Rumah Tukang Kahar* (**HD5**) and *Rumah Dato' Perba Meon* (**HD4**). These houses were taken down part by part instead of being lifted up all at once by the villagers, as usually happens (Figure 2.16). Problems occurred when the houses were reassembled as the builders failed to replicate their original form, causing irreparable damage to some of the elements, which needed to be replaced. Both of these houses have similar problems, and the *Serambi* area has not been completed because of this. **HD4** also mentioned that she does not know what happened to *Rumah Dapur*, but she believes that it too is facing the same problem. All of the alterations made to the house have changed the characteristics of the original houses, which, typologically, were built on stilts with *Serambi*, *Rumah Ibu* and *Rumah Dapur* being the main elements in the NSTMH. Table 6.1 below further explains the changes made in respect of the **Category B** and **C** house owners, and the reasons for these changes.

Table 6.1: Some of the changes made to Category B and C houses and the reasons for the changes.

*Rumah Hajah Sali Salleh (HB1):*

NO.	CHANGES	REASONS
1.	Changing of roof with blue metal decking in 2009	Always leaking and feel uncomfot when it is raining that create noise
2.	Additional room in <i>Rumah Ibu</i>	Her son's wedding
3.	Bring down the <i>Rumah Dapur</i> to the ground	Easily accessible for electrical appliances such as freezer
4.	Additional of bathroom at the back	To be more comfortable.

*Rumah Kalsom Sohor (HB2):*

NO.	CHANGES	REASONS
1.	Closed the original open <i>Serambi</i>	Due to the need of more space to sleep (many children),
2.	Additional of new garage attached to the main entrance of <i>Serambi</i>	Park the car closed to the house
3.	Installed ceiling at <i>Serambi</i> area	To reduce heat affected from the use of zinc material (very low roof)
4.	Painted internal wall in yellow colour	No reason
5.	Demolished and built <i>Rumah Dapur</i> on the ground.	Poor condition and easy accessible from side entrance

*Rumah Posah Sawal (HC1):*

NO.	CHANGES	REASONS
1.	Painted with lime green	Personal interest
2.	Timber ladder to concrete staircase	Safety
3.	One of the column (in the middle of the room) at <i>Rumah Ibu</i> has been cut away	Safety (children always bang heads)

*Rumah Hajah Niat Jalil (HC2):*

NO.	CHANGES	REASONS
1.	Refurbishment of the house (May 2013):	The house already skewed
2.	Paint (internal (light yellow) external (timber tone)	Personal interest
3	Roof zinc to metal decking	Original material (palm leaves) is difficult to get with final product.
4	Put ceiling at <i>Serambi</i> and <i>Rumah Ibu</i> and covered almost half of the decorative rafter ( <i>Serambi</i> )	To reduce heat
5	Demolished the existing room (wall) at <i>Serambi Pangkal</i>	To look bigger as original <i>Serambi</i> .

## 6.4 Analysis of the Changing Patterns

From the observations on site, various types of extensions and changes were made to the houses. This primarily demonstrates misunderstandings of the house typology where the original character of the house was altered and this, in turn, completely changed the atmosphere of the area. None of the houses remain in their original condition.

A total of 26 NSTMHs were surveyed but only 17 of these were analysed according to the research needs shown in Table 6.2, which summarises the changes and alterations observed to the houses from their original design to their current condition, organised according to the architectural elements of *Serambi*, *Rumah Ibu* and *Rumah Dapur* and classified into four patterns (Figure 6.4), such as:

- |                                 |   |
|---------------------------------|---|
| a) Back (B)                     | : HA1, HB1, HC2, HD9                        |
| b) Front (F) and Back (B)       | : HA6, HA3, HA4, HA8, HB2, HD1,<br>HD4, HD5 |
| c) Back (B) and Side (S)        | : HC1                                       |
| d) All Sides and Underneath 9U) | : HA2, HA5, HA7, HA9                        |



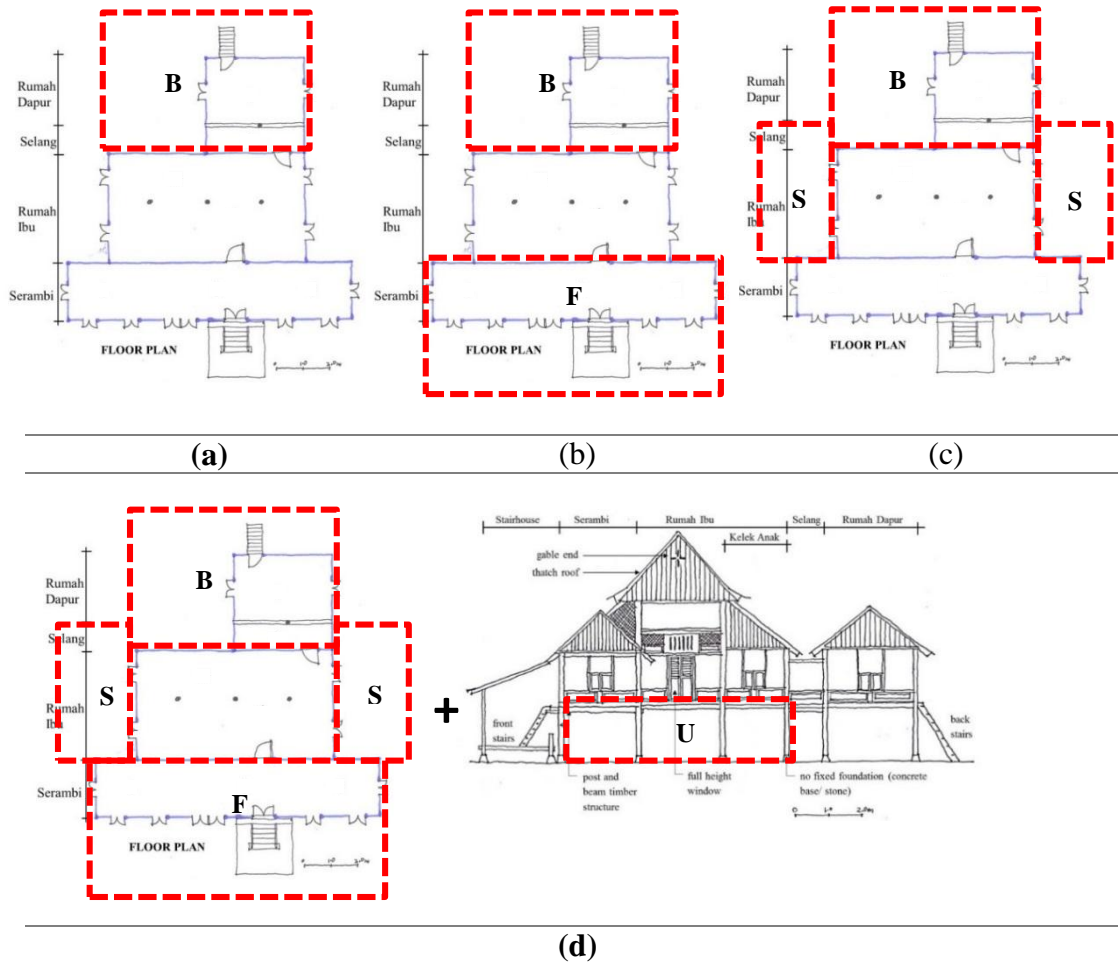


Figure 6.4: The basic patterns of changes to the NSTMHs based on the observation on site.  
Source: Author (2015)

Most of the changes have been made at the back of the houses, to the *Rumah Dapur* (kitchen area), as demonstrated at *Rumah Dato' Laksemama Hajah Bogdad (HA1)*, *Rumah Hajah Sali Salleh (HB1)*, *Rumah Hajah Niat Jalil (HC2)* and *Rumah Maimunah Yaakub (HD9)*. The original *Rumah Dapur* was built on stilts and has been replaced with a new area built on the ground floor; this has been the case for all the houses. Not only that, the *Rumah Dapur* has been demolished and replaced with new spaces such as living areas, dining rooms, kitchens, new bedrooms and toilets (Figure 2.17). All of these spaces are normally provided and used by most of the house owners. The new *Rumah Dapur* was made with a modern construction using bricks, concrete, cement, glass louvre windows, porcelain tiles, zinc, ardec or metal decking roof. These

are the most common construction materials used in the extensions of the houses. The second most common changes were made to the front facade (*Serambi* area), with a modern porch, and at the back of the house, as found in *Rumah Pesaka Puan Hasnah Hitam* (**HA6**), *Rumah Uwan Zunah* (**HA3**), *Rumah Dato' Sidin* (**HA4**), *Rumah Norfiah Hassan* (**HA8**), *Rumah Kalsom Sohor* (**HB2**), *Rumah Che Tom Sulaiman* (**HD1**), *Rumah Dato' Perba Meon* (**HD4**) and *Rumah Tukang Kahar* (**HD5**).

The third most common change was made to the back and side of the house, demonstrated in the *Rumah Posah Sawal* (**HC1**). This house had a double frontage when the back of the house (*Rumah Dapur*) was refurbished due to a new right of way being built across the site. Four of the houses were totally transformed on all sides, such as *Rumah Hajah Maharan Jonad* (**HA2**), *Rumah Hajah Rafeah Mohd Yusof* (**HA5**), *Rumah Puan Lamah Hj Saman* (**HA7**) and *Rumah Dato' Gempa Maharaja Hj Mohd Zakaria* (**HA9**). The **HA7** and **HD9** houses also had changes made to the spaces underneath the house. They fully utilised the underneath space of the original house to make it into a new space (living or bedroom) for *Rumah Puan Lamah Hj Saman* (**HA7**) and a reception area / gallery for *Rumah Dato' Gempa Maharaja Hj Mohd Zakaria* (**HA9**). This is because the height of the ceiling is extended due to the raising of the footings of the house (**HA9**) and their conversion into two-stories. Not only that, **HA9** was also extended to replace the *Rumah Dapur* with a double-storey concrete bungalow. This survey shows that this is the only house that has been changed in this way.

As mentioned in Chapter 5, the changing pattern of the NSTMHs was analysed according to the following classification of the owners:

Category A: Resident house owners;

Category B: Resident caretakers;

Category C: Non-resident house owners with non-resident caretakers;

Category D: Abandoned.

Sometimes, the traditional values behind it provide an opportunity for scholars to learn from the past and apply an innovative approach to a modern sustainability context. But for this research, very often the basic problem that occurred affected the specific characteristic of the NSTMH rather than the entire house.

The modern historic analysis is focused more on integrated approach rather than typological studies but the NSTMH has specific and repetitive elements (roof, wall, ceiling, floor, staircase, window, door, others), each with its own problems and different in character between houses. Therefore, it is difficult to apply any kind of holistic approach to their treatment and it makes sense to treat each element separately. The data in Table 6.2 were analysed according to the changing pattern in the NSTMH typologies (*Serambi*, *Rumah Ibu* and *Rumah Dapur*) that were related to the form, fabric as well as the function, where they intersect and interact with each other. This is how the data is presented in Table 6.2, with analysis following it.

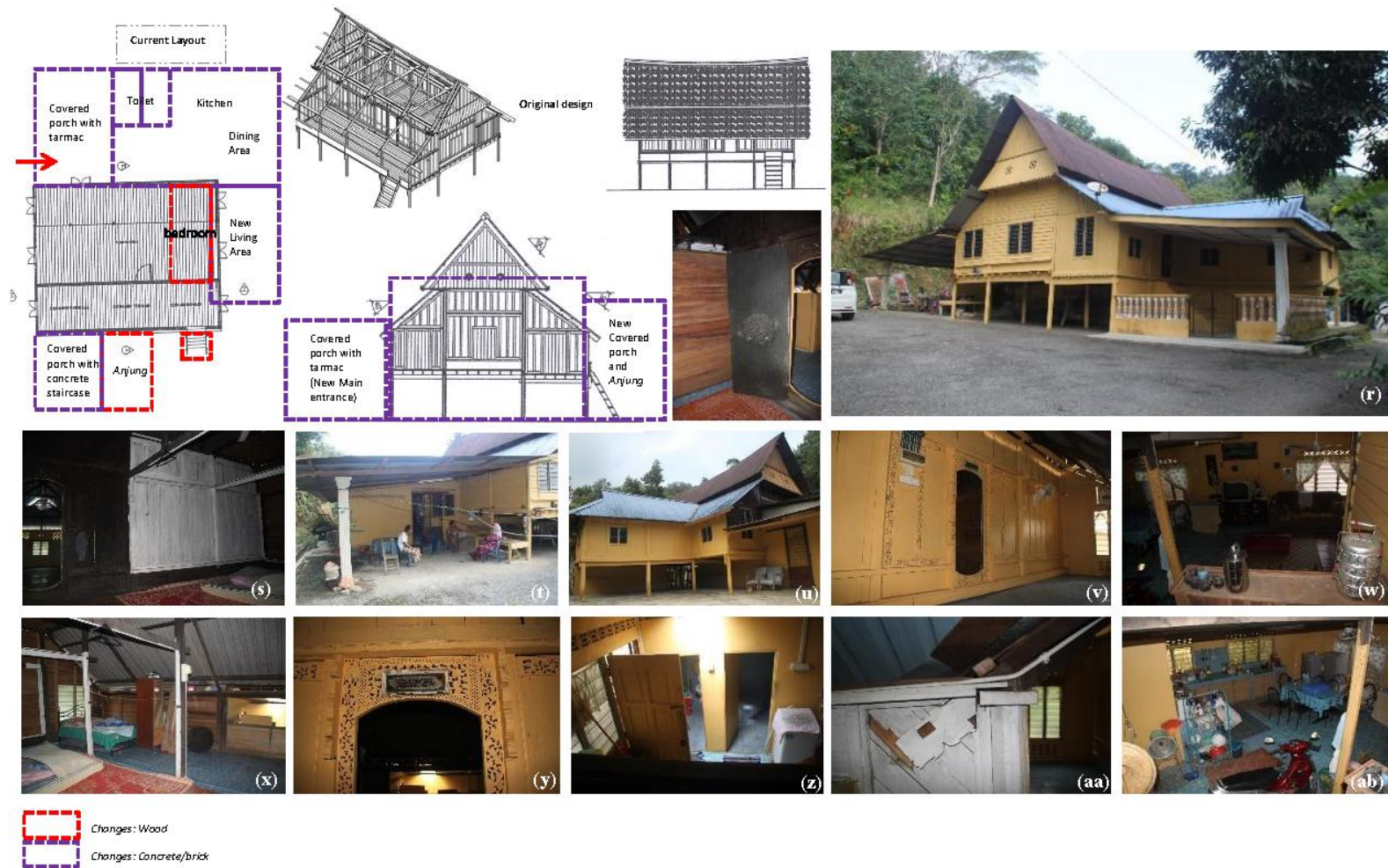
Table 6.2: Detailed analysis on the changes to the form, fabric and function according to the main typologies of NSTMHs (the *Serambi*, the *Rumah Ibu* and the *Rumah Dapur*).

NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN	
			FORM		FABRIC		FUNCTION			
			Original	Current Condition	Original	Current Condition	Original	Current Condition		
1.	1.	SERAMBI	On stilt and long roof type	As Original	Timber	As Original	Entertain guest	As Original	OVERALL CHANGES PATTERN	
			Roof	Traditional	Refurbished (a)	Palm leaves	Zinc (a)	-		-
			Wall	Traditional	Remain	Timber	As Original	-		-
		Ceiling	No	-	-	-	-	-		
		Floor	Traditional	As Original	Timber	Timber (covers with vinyl) (h)	-	-		
		Staircase	Traditional	As Original	Concrete	As Original	-	-		
		Window	Traditional	As Original	Timber	As Original	-	-		
		Door	Traditional	As Original	Timber	As Original	-	-		
		Others	As Original	As Original	As Original	As Original	-	-		
		RUMAH IBU	Long roof, slightly curved at both ends	As Original	Timber	As Original	Sleeping area, entertain guest	As Original		
		Roof	Traditional	Refurbished (a)	Palm Leaves	Zinc (a)	-	-		
		Wall	Traditional	As Original	Decorative timber panel	As Original	-	-		
		Ceiling	No	-	-	-	-	-		
		Floor	Traditional (Raised floor)	As Original	Timber	Timber (covers with vinyl) (h)	-	-		
		Window	Traditional	As Original	Timber	As Original	-	-		
		Door	Traditional	As Original	Timber panel	As Original	-	-		
		Others	-	-	-	-	-	-		
		RUMAH DAPUR	On stilt	On the ground	Timber	Modern construction and finishes	Kitchen	Two side entrances, living room, dining, bedrooms, kitchen, toilet and foyer (j)		
		Roof	Traditional (Pitch roof)	Refurbished (Limas roof) (a)	Palm leaves	Ardec (a)	-	-		
		Wall	Traditional	Refurbished (b)	Timber	Bricks, concrete and vent blocks (b)	-	-		
		Floor	Traditional (raised floor on stilt)	Refurbished (on the ground) (c)	Timber	Concrete slab with cement render covers with vinyl (kitchen), tiles (toilet, dining) (c)	-	-		
		Ceiling	No	Yes (d)	-	Ceiling board (dining and bedrooms), no Ceiling at Kitchen area (d)	-	-		
		Staircase	Yes	New staircase (e)	Timber	Concrete (e)	-	-		
		Window	Traditional	Refurbished (f)	Timber	Casement (f)	-	-		
		Door	Yes	Demolished (g)	Timber	New timber door (g)	-	-		
		Others				White paint, electric fan, foyer:roman column with cement render, drainage system (i)				



NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	FORM		CHANGES FABRIC		FUNCTION		OVERALL CHANGES PATTERN
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
2.	(Category A) HA2	<b>SERAMBI</b>	Open ( <i>Lepa</i> )	Closed with additional <i>Anjung</i> (a)	Timber	New Timber	Entertain male guest,	Empty (not use) (n)	ALL SIDES
		Roof	Traditional	Refurbished ( <i>Limas</i> Roof) (b)	Palm Leaves	Blue Metal deck (b)	water proofong	As original	
		Wall	Low wall (open)	New enclosure (c)	Timber	-Mixed of diagonal and vertical timber plank (painted in yellow), -half of <i>Anjung</i> painted in white (internal) (c)	-partition? Envelope?	-	
		Ceiling	No	-	-	-	-decorative or thermal proof?	-	
		Floor	Traditional (Raised floor)	As Original	timber	Timber (covers with vinyl) (j)	-	-	
		Staircase	Yes	Relocate and refurbished (d)	Timber on the right side	Concrete on the left side (d)	-external?	-	
		Window	No	New window enclosure (e)	No	Glass louvres (various sizes) (e)	-	-	
		Door	No	New door (f)	No	New panel (f)	-	-	
		Foyer	No	Slanting roof with squared plan (g)	No	Concrete slab with cement render and decorative baluster, Roman column, ceiling board, (g)	-	-	
		<i>Others</i>				Underneath space cover with half tarmac half cement render (k)			
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As Original	Timber	External (yellow painted), internal (half white)	Sleeping area, entertain female guest	Sleeping area only	
		Roof	Traditional	Refurbished (b)	-Palm Leaves	-Zinc (b)	-	-	
		Wall	Traditional	Refurbished (c)	Vertical timber panel	-Painted in yellow (hide the beautiful carvings) and white at the back -New horizontal timber planks -Demolished half wall at the back and side to allow new entrance to the new kitchen area (c)	-	-	
		Ceiling	No	-	-	-	-	-	
		Floor	Traditional (Raised floor)	As Original	timber	Timber (covers with vinyl) (j)	-	-	
		Window	Traditional	Refurbished (e)	timber	Louvres glass (some) (e)	-	-	
		Door	Traditional	As Original	Decorative solid timber with carving architrave	Remain	-	-	
		Others	-	-	-	-Underneath space cover with tarmac -Electric fan with additional beam (k)	-	Underneath space as storage and chicken coop (o)	
		<b>RUMAH DAPUR</b>	On stilt	On the ground	Timber	Modern construction and finishes	Kitchen	Two new main entrance, living room, dining, bedrooms, kitchen, toilet and two foyer (p)	
		<i>Roof</i>	Traditional (pitch)	Refurbished (b)	Palm leaves	Zinc (b)	-	-	
		<i>Wall</i>	Traditional	Refurbished (c)	-	Bricks, concrete and vent blocks (c)	-	-	
		<i>Floor</i>	Traditional (Raised floor on stilt)	Refurbished (On the ground) (h)	timber	Concrete slab with cement render, covers with vinyl, tiles in toilet area and kitchen cabinet (h)	-	-	
		<i>Ceiling</i>	No	Yes	-	Ceiling board (l)	-	-	
		<i>Staircase</i>	Traditional	Refurbished (d)	Timber	Concrete (d)	-	-	
		<i>Window</i>	Traditional	Refurbished (e)	-	Glass louvres (e)	-	-	
		<i>Door</i>	Traditional	Refurbished (i)	-	Timber door, mild steel grill (i)	-	-	
		<i>Others</i>				Yellow paint, electric fan, foyer:roman column, drainage system (m)			



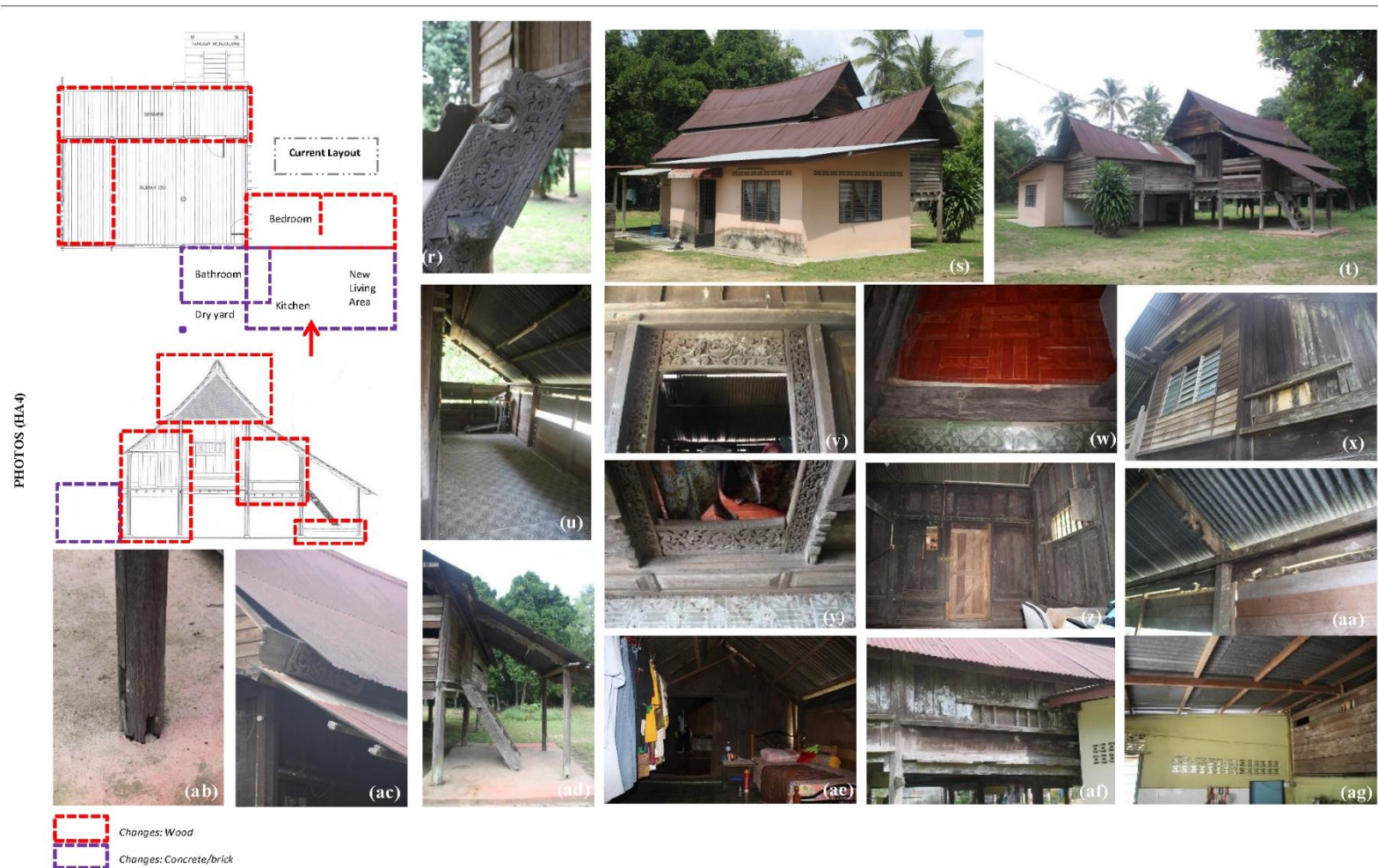


NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
3.	(Category A) HA3	<b>SERAMBI</b>	<i>Serambi Hujung, Serambi Pangkal and Serambi Tengah</i>	Added <i>Anjung</i> and bedroom (a)	Timber	Timber	Entertain male guest	Remain	BACK
		Roof	Traditional	Refurbished (b) <i>Limas roof at Anjung</i>	Palm Leaves	Zinc (b)	-	-	
		Wall	Traditional	Refurbished (c)	-	Painted in white and light blue (internal), replaced with diagonal timber plank for <i>Anjung</i> , Timber wall for bedroom (c)	-	-	
		Ceiling	No	Yes (c)	-	Plywood (c)	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl and rugs) (i)	-	-	
		Staircase	Traditional	Refurbished (1958) (d)	Timber	Relocated with concrete staircase and platform (d)	-	-	
		Window	Traditional	As original	Timber	As original	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	-	Slanting roof at foyer (e)	-	-	-	-	
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As original	Timber	Timber	Sleeping area, entertain female guest	As original	
		Roof	Traditional	Refurbished (b)	Palm Leaves	Zinc (b)	-	-	
		Wall	Traditional	Remain, refurbished internal for bedroom (f)	Timber	Plywood with painted in cream and green (f)	-	-	
		Ceiling	No	Yes (c)	-	Plywood (c)	-	-	
		Floor	Traditional (Raised floor)	As original	timber	Timber (covers with vinyl) (i)	-	-	
		Window	Traditional	As original	timber	As original	-	-	
		Door	Traditional	As original	timber	As original	-	-	
		Others	-	-	-	-	-	-	
		<b>RUMAH DAPUR</b>	On stilt	On the ground with courtyard (g)	Timber	Modern material	Kitchen	One bedroom, two toilets (internal), kitchen, dining, living, three side entrances (k)	
		<i>Roof</i>	Traditional (Pitch roof)	Refurbished (b)	-	Zinc (b)	-	-	
		<i>Wall</i>	Traditional	Refurbished (a)	timber	Mixed of full brick wall and Half zinc half brick, (j)	-	-	
		<i>Floor</i>	Traditional (Raised floor -on stilt)	Refurbished (On the ground) (b)	timber	Concrete slab with cement render (j)	-	-	
		<i>Ceiling</i>	No	No	-	-	-	-	
		<i>Staircase</i>	Yes	Refurbished (d)	Timber	Concrete (d)	-	-	
		<i>Window</i>	Traditional	Refurbished (h)	-	Glass louveres (h)	-	-	
		<i>Door</i>	-	-	-	-	-	-	
		<i>Others</i>	-	-	-	-	-	-	





NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
4.	(Category A) HA4	<b>SERAMBI</b>	Open ( <i>Lepa</i> )	Closed	Timber	New Timber	Entertain male guest (traditional)	Empty (not use) (p)	SIDE BACK AND FRONT
		Roof	Traditional	Refurbished (a)	Palm Leaves	Zinc (a)	-	-	
		Wall	No	New enclosure (b)	No wall (Traditional) with Decorative timber beam	-Horizontal timber plank -add timber stud to support (hide the decorative beam) (b)	-	-	
		Ceiling	No	-	-	-	-	-	
		Floor	Traditional (Raised floor)	As Original	Timber	Timber (covers with vinyl) (l)	-	-	
		Staircase	Yes	Refurbished (below part)(c)	Timber with timber platform stair house	Bottom part changed to concrete steps (c)	-	-	
		Window	No	Horizontal opening (d)	-	-	-	-	
		Door	No	New door (e)	No	Timber plank (e)	-	-	
		Others							
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends (Traditional)	As Original	Timber		Sleeping area, entertain female guest (Traditional)	New bedroom with plywood wall (n)	
		Roof	Traditional	Refurbished (a)	-Palm Leaves -Woven bamboo (end gables)	-Zinc (a) -Horizontal timber planks (m)	-	-	
		Wall	Traditional	Open through for kitchen extension (f)	Timber	Plywood used for bedroom (n)	-	-	
		Ceiling	No	-	-	-	-	-	
		Floor	Traditional (Raised floor)	As Original	Timber	Timber (covers with vinyl) (l)	-	-	
		Window	Traditional	Refurbished (g)	-Timber	-Louvres glass (bedroom)	-	-	
		Door	Traditional	Refurbished (e)	-Decorative solid timber with carving architrave -Solid Timber	-Remain -Timber plank (e)	-	-	
		Others	Decorative elements (Traditional)	Refurbished (h)	Decorative elements	Close with plywood (h)	Ventilation (Traditional)	-(q)	
		<b>RUMAH DAPUR</b>	On stilt (Traditional)	On the ground	Timber (Traditional)		Kitchen (Traditional)	New main entrance, living room, dining, bedrooms, kitchen, toilet and small foyer (h)	
		Roof	Traditional (Pitch)	Refurbished (long roof + slanting) (a)	Palm leaves	Zinc (a)	-	-	
		Wall	Traditional	Refurbished (i)	Timber	Bricks, concrete and vent blocks (i)	-	-	
		Floor	Traditional (Raised floor on stilt)	Refurbished (On stilt and on the ground) (j)	Timber	Concrete slab with cement render, covers with vinyl (j)	-	-	
		Ceiling	No	-	-	No	-	-	
		Staircase	Yes	Remain	Timber	Remain	-	-	
		Window	-	Yes (g)	-	Glass louvres (g)	-	-	
		Door	-	Yes (k)	Timber	Timber door, mild steel grill (k)	-	-	
		Others				White paint, electric fan, awning, drainage system (o)			



NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
5.		<b>SERAMBI</b>	<i>Serambi Hujung, Serambi Pangkal and Serambi Tengah</i>	Enlarge <i>Serambi Pangkal</i> and Create access from <i>Serambi Hujung</i> to new bedroom attached to <i>Rumah Ibu</i> (a)	Timber	Timber	Entertain male guest	Rarely used (h)	
		Roof	Traditional	Refurbished (b)	Palm leaves	Zinc (b)	-	-	
		Wall	Traditional	Refurbished (internal) (c)	Timber	Painted in cream (internal), replaced with nomnal vertical plywood at <i>Serambi Hujung</i> , different wall at <i>Serambi Pangkal</i> , vent block to cover underneath space(c)	-	-	
		Ceiling	No	Yes (d)	-	Timber and plywood (d)	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl and carpet) (g)	-	-	
		Staircase	Yes	As original	Concrete	Red metal deck roof with concrete slab finished with tiles(f)	-	-	
		Window	Traditional	As original	Timber	As original	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	-	-	-	-	-	-	
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends, Attic space on top of it and one bedroom	Attic space not used anymore	Timber	Timber	Sleeping area, entertain female guest	Rarely used (h)	
		Roof	Traditional	Refurbished (b)	Palm leaves	Zinc	-	-	
		Wall	Traditional	Remain	Decorative wall panelling	Remain but missing one part of it, cream paint at bedroom (g)	-	-	
		Ceiling	No	Yes (d)	-	Plywood (d)	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl) (g)	-	-	
		Window	Traditional	As original	Timber	As original	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	-	-	-	-	-	-	
		<b>RUMAH DAPUR</b>	On the ground	On the ground	Timber	Modern material	Kitchen	Five bedrooms (used), two bedrooms (not used), five toilets (internal), kitchen, dining(external/internal), living, three side entrances (i)	
		<i>Roof</i>	Traditional (Pitch roof)	Refurbished ( <i>limas</i> and slanting roof) (b)	-	Zinc (b)	-	-	
		<i>Wall</i>	Traditional	Refurbished (c)	timber	Mixed of full brick wall and half timber half brick, plywood vent block (c)	-	-	
		<i>Floor</i>	On the ground	Refurbished (On the ground) (e)	timber	Concrete slab with tiles (e)	-	-	
		<i>Ceiling</i>	No	Yes (d)	-	Board (d)	-	-	
		<i>Staircase</i>	Yes	As original	Concrete	As original	-	-	
		<i>Window</i>	Yes	Refurbished (f)	-	Glass louvres (f)	-	-	
		<i>Door</i>	Yes	New door	-	Timber	-	-	
		<i>Others</i>	-	-	-	-	-	-	

(Category A)  
HAS

ALL





NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
6.	(Category A) HA6	<b>SERAMBI</b>	Serambi Hujung, Serambi Pangkal and Serambi Tengah	As original	Timber	Timber	Entertain male guest	Rarely used (k)	FRONT and BACK
		Roof	Traditional	Refurbished (both end changes to pyramid roof shape) (a)	Palm leaves	Zinc (a)	-	-	
		Wall	Traditional	Refurbished (b)	Timber	Painted in cream and light blue (internal), light and dark green (external) (b)	-	-	
		Ceiling	No	Yes (c)	-	Timber painted in white (c)	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl) (h)	-	-	
		Staircase	Traditional	Refurbished (d)	Timber	Concrete slab with tiles (d)	-	-	
		Window	Traditional	As original	Timber	As original	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	-	Modern foyer rectangular shape (e)	-	Concrete Roman column and balustrade with ceiling board, metal deck roof with rain water down pipe. Has covered the decorative ventilation elements (e)	-	-	
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As original	Timber	Timber	Sleeping area, entertain female guest	Rarely used (k)	
		Roof	Traditional	Refurbished (a)	Palm leaves	Zinc (a)	-	-	
		Wall	Traditional	As original	Timber	As original	-	-	
		Ceiling	No	Yes (c)	-	Plywood painted in white (c)	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl) (h)	-	-	
		Window	Traditional	Refurbished (f)	Timber	Glass louvres (f)	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	-	-	-	-	-	-	
		<b>RUMAH DAPUR</b>	On stilt	On the ground	Timber	Modern material	Kitchen	Two bedrooms, toilet (external), kitchen, dining, living, two side entrances (l)	
		Roof	Traditional (Pitch roof)	Refurbished (Limas and pitch roof) (a)	-	Zinc (a)	-	-	
		Wall	Traditional	Refurbished (b)	timber	Mixed of full brick wall and Half timber half brick, vent block (i)	-	-	
		Floor	Traditional (Raised floor - on stilt)	Refurbished (On the ground) (g)	timber	Concrete slab with cement render and cover with vinyl(j)	-	-	
		Ceiling	No	Yes (c)	-	Plywood painted in white (c)	-	-	
		Staircase	Yes	Refurbished (d)	Timber	Concrete (d)	-	-	
		Window	Traditional	Refurbished (f)	-	Glass louvres (f)	-	-	
		Door	Traditional	Refurbished (g)	-	New timber door (g)	-	-	
		Others	-	-	-	-	-	-	

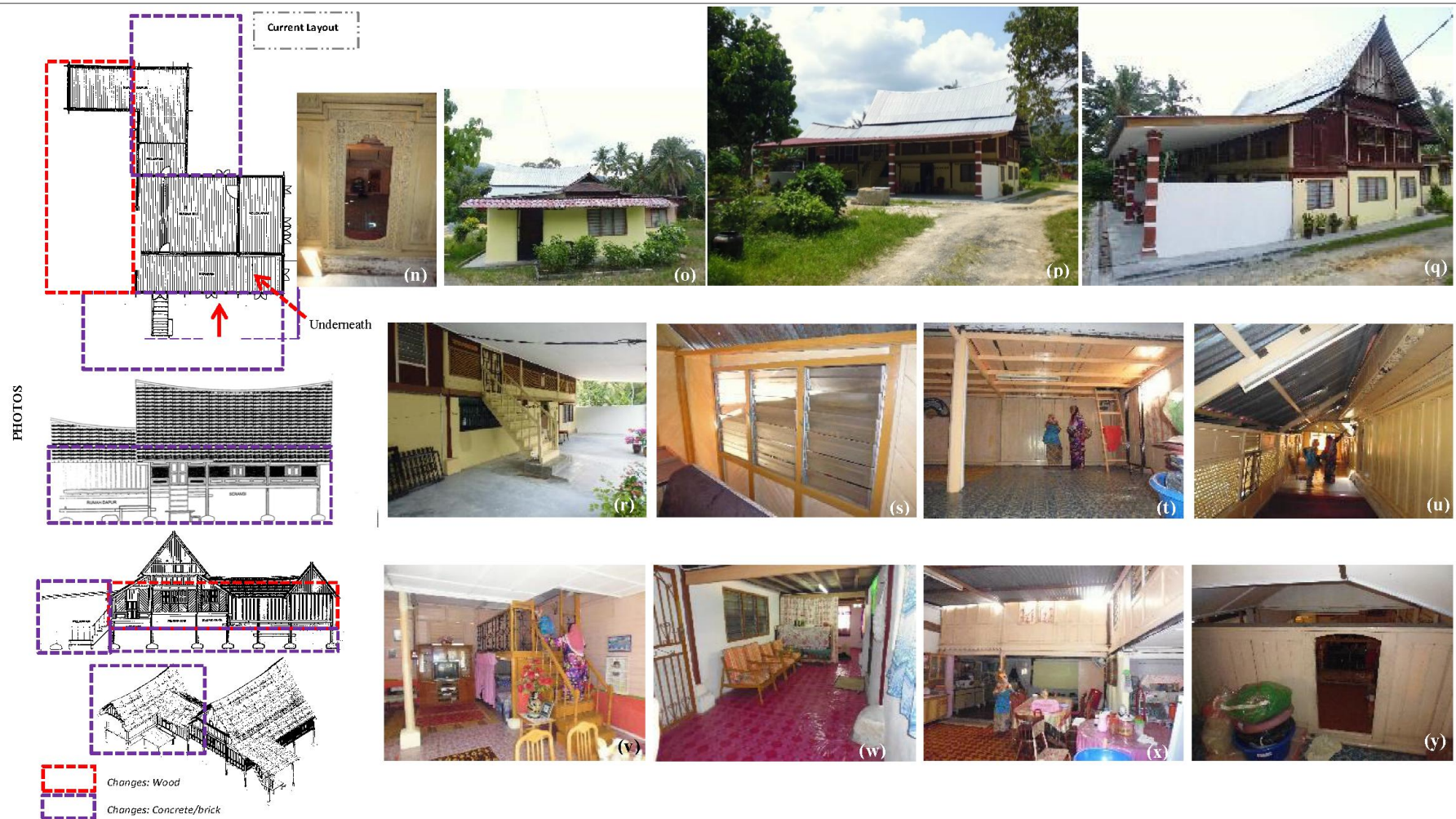


NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	FORM		CHANGES FABRIC		FUNCTION		OVERALL CHANGES PATTERN
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
(Category A) HA7		<b>SERAMBI</b>	<i>Serambi Tengah</i>	Remain with new addition of <i>Serambi Pangkal</i> and the underneath space as main entrance (a)	Timber	Timber	Entertain male guest	Rarely used (k)	FRONT and BACK
		Roof	Traditional	Refurbished (a)	Palm leaves	Zinc and metal decks (Foyer)(a)	-	-	
		Wall	Traditional	Remain (the original design) Refurbished (underneath space) (c)	Timber	Painted in cream (internal),cream and dark brown (external) (b)	-	-	
		Ceiling	No	No	-	-	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl and rugs) (h)	-	-	
		Staircase	Traditional	Refurbished (d)	Timber	Add concrete base and slab for new foyer (d)	-	-	
		Window	Traditional	Refurbished	Timber	Remain some and with glass louvers at <i>Serambi Pangkal</i>	-	-	
		Door	Traditional	Remain (top ori), new door underneath	Timber	Remain (top ori) with grill, Underneath-metal door with mosquito net on top	-	-	
		Others	-	New modern foyer rectangular shape (e)	-	Cement render finished with concrete column, ceiling board, metal deck roof, vent block, glass louvers, brickwall painted in white, drainage. Remain one original footing (e)	-	Undemeath space become reception area (under <i>Serambi Tengah</i> ) and part of kitchen (under <i>Serambi Pangkal</i> )	
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As original	Timber	Timber	Sleeping area, entertain female guest	Rarely used (k)	
		Roof	Traditional	Refurbished (a)	Palm leaves	Zinc. New connection structure from <i>Rumah Ibu</i> to <i>Selang</i> and <i>Rumah Dapur</i> extension (a)	-	-	
		Wall	Traditional	As original	Timber	As original. External wall painted with dark brown, metal awning	-	-	
		Ceiling	No	Yes (c)	-	New ceiling at lower roof (c)	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl) (h)	-	-	
		Window	Traditional	Refurbished (f)	Timber	Glass louvres (f)	-	-	
		Door	Traditional	Remain at Rumah Ibu architrave but no door to <i>Selang</i> or <i>Rumah Dapur</i>	Timber	As original	-	-	
		Others	<i>Loteng</i> (attic)	Quite low (might be added later)	Timber	Remain. Underneath wall (full brickwall with louvers windows painted in cream	-	Undemeath space become bedroom, toilet, kitchen and dining besides	
		<b>RUMAH DAPUR</b>	On stilt	On the ground	Timber	Modern material	Kitchen	Bedrooms, toilets kitchen, dining, living,one back and one side entrances (l)	
		<i>Roof</i>	Traditional (Pitch roof)	Refurbished ( <i>Limas</i> and slanting roof) (a)	-	Zinc / metal deck (a)	-	-	
		<i>Wall</i>	Traditional	Refurbished (b)	timber	Mixed of full brick wall and Half timber half brick, vent block (i)	-	-	
		<i>Floor</i>	Traditional (Raised floor -on stilt)	Refurbished (On the ground) (g)	timber	Concrete slab with cement render and cover with vinyl(j)	-	-	
		<i>Ceiling</i>	No	Yes (c)	-	Plywood painted in white (c)	-	-	
		<i>Staircase</i>	Yes	Refurbished (d)	Timber	New timber staircase from <i>Selang</i> to the ground with decorative steel railing (d)	-	-	
		<i>Window</i>	Traditional	Refurbished (f)	-	Glass louvres with awning (blue and red)(f)	-	-	
		<i>Door</i>	Traditional	Refurbished (g)	-	New timber door (g)	-	-	
		<i>Others</i>				Drainage system (m)			

(Category A)  
HA7

FRONT  
and BACK



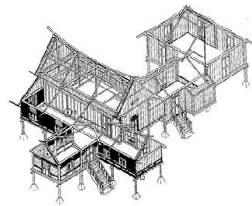
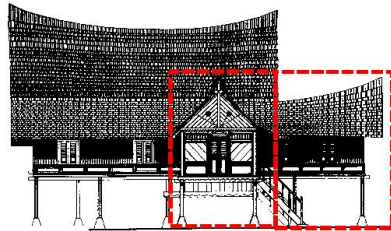
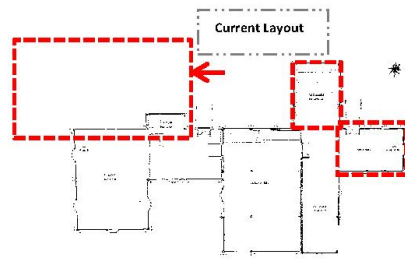


NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
8.  <									

(Category A)  
HAS

BACK





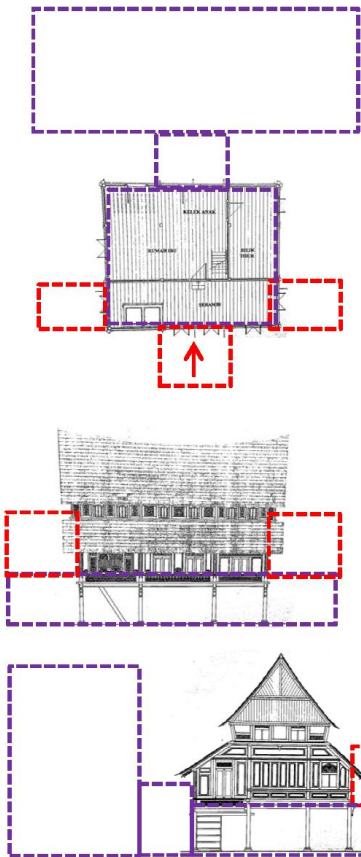
Changes: Wood



Changes: Concrete/brick



NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	FORM		CHANGES FABRIC		FUNCTION		OVERALL CHANGES PATTERN
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
9.	(Category A) HA9	<b>SERAMBI</b>	<i>Serambi Hujung, Serambi Pangkal Serambi Tengah and Anjung</i>	Remain but with new addition of underneath space as main entrance (a)	Timber	Timber	Entertain male guest	Rarely used. New main entrance on the ground floor, One storage.(l)	BACK and UNDERNEATH
		Roof	Traditional	Refurbished (b)	Palm leaves	Zinc, additional roof truss at <i>Serambi Hujung</i> (b)	-	-	
		Wall	Traditional	As original. Refurbished (undemeath space) (c)	Timber	Replaced with new diagonal timber plank at <i>Serambi Hujung</i> and <i>Anjung</i> . Refurbished with horizontal plank and bricks to enclose new underneath space. Vent blocks. (c)	-	-	
		Ceiling	No	Yes (d)	-	Plywood painted with white and green frame (d)	-	-	
		Floor	Traditional (Raised floor)	As original. <i>Anjung</i> area supported by new Roman column on both sides. (e)	Timber	As original. Underneath space finished with cement render. (e)	-	-	
		Staircase	Traditional (drop)	As original (fixed)	Timber	As original	-	-	
		Window	Traditional	Remain (Original). New window enclosure (Underneath space) (f)	Timber	As original. Underneath space-Timber with steel bar and Glass louvers (f)	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	-	Apron and drainage (g)	-	Concrete apron and drainage, electrical fan (g)	-	-	
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As original	Timber	Timber	Sleeping area, entertain female guest	Rarely used. One storage underneath side.(m)	
		Roof	Traditional	Refurbished (b)	Palm leaves	Zinc. Gutter and Rain water down pipe at the back portion of the <i>Rumah Ibu</i> only. (b)	-	-	
		Wall	Traditional	Remain. Some refurbished (c)	Timber	New timber and new window on the left of <i>Rumah Ibu</i> Bedroom painted in light blue. (c)	-	-	
		Ceiling	No	Yes (d)	-	Plywood painted with white and green frame at lower roof only (d)	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber	-	-	
		Window	Traditional	As original	Timber	As original	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	<i>Loteng</i> (attic)	As original	Timber	As original	-	-	
		<b>RUMAH DAPUR</b>	On stilt	On the ground	Timber	Modern material	Kitchen	Bedrooms, toilets, kitchen, dining, living, new entrances (n)	
		<i>Roof</i>	Traditional (Pitch roof)	Refurbished ( <i>limas</i> roof) (b)	Palm leaves	Roof tiles (light blue) with gutter and rain water down pipe (b)	-	-	
		<i>Wall</i>	Traditional	Refurbished (h)	timber	Full brick wall, and glass block, steel railing at balcony and roman column at car porch and balcony (h)	-	-	
		<i>Floor</i>	Traditional (Raised floor -on stilt)	Refurbished (On the ground) (i)	timber	Concrete slab with tiles and marble (i)	-	-	
		<i>Ceiling</i>	No	Yes (h)	-	Plaster ceiling (h)	-	-	
		<i>Staircase</i>	Yes	No (i)	Timber	New Concrete staircase finished with marble (i)	-	-	
		<i>Window</i>	Traditional	Refurbished (j)	Timber	Casement (j)	-	-	
		<i>Door</i>	Traditional	Refurbished (k)	Timber	Panel door and sliding door (k)	-	-	
		<i>Others</i>				-			

PHOTOS



 Changes: Wood  
 Changes: Concrete/brick

NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES					OVERALL CHANGES PATTERN	
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original		Current Condition
10.	(Category B) HB1	<i>Serambi</i>	Open ( <i>Lepa</i> )	Closed	Timber	New Timber	Entertain male guest	Remain	BACK
		Roof	Traditional	Refurbished (a)	Palm Leaves	Blue metal deck (a)	-	-	
		Wall	No	New enclosure (b)	-	Painted in cream colour (internal) (b)	-	-	
		Ceiling	-	-	-	-	-	-	
		Floor	Traditional (Raised floor)	Remain	timber	Timber (covers with vinyl) (j)	-	-	
		Staircase	Yes	Refurbished (c)	Timber with stair house	Bottom part changed to concrete steps (c)	-	-	
		Window	No	New window enclosure (d)	No	-	-	-	
		Door	No	New door (e)	No	Timber (e)	-	-	
		Others							
		<i>Rumah Ibu</i>	Long roof, slightly curved at both ends	Remain	Timber	Timber	Sleeping area, entertain female guest	New bedroom with plywood wall (m)	
		Roof	Traditional	Refurbished (a)	-Palm Leaves -Woven bamboo (end gables)	- Blue metal deck -Roof structure has changed to connect kitchen area (a)	-	-	
		Wall	Traditional	Refurbished (b)	-	New plywood for bedroom (k)	-	-	
		Ceiling	-	-	-	-	-	-	
		Floor	Traditional (Raised floor)	Remain	timber	Timber (covers with vinyl) (j)	-	-	
		Window	Traditional	Remain	timber	Louvres glass (bedroom) (g)	-	-	
		Door	Traditional	Remain	Decorative solid timber with carving architrave	Remain	-	-	
		Others	-	-	-	-	-	-	
		<i>Rumah Dapur</i>	On stilt	On the ground	Timber		Kitchen	Back entrance, dining, kitchen, toilet (external) (n)	
		<i>Roof</i>	Traditional (Pitch roof)	Refurbished (Limas and pitch roof) (a)	Palm leaves	Blue metal deck (a)	-	-	
		<i>Wall</i>	Traditional	Refurbished (f)	-	Bricks, concrete and vent blocks (f)	-	-	
		<i>Floor</i>	Traditional (Raised floor on stilt)	Refurbished (On the ground) (g)	timber	Concrete slab with cement render, covers with vinyl (g)	-	-	
		<i>Ceiling</i>	-	-	-	-	-	-	
		<i>Staircase</i>	Yes	Remain	Timber	Remain	-	-	
		<i>Window</i>	Yes	Refurbished (h)	Timber	Glass louvres (h)	-	-	
		<i>Door</i>	Yes	Refurbished (i)	Timber	New Timber door (i)	-	-	
		<i>Others</i>				Drainage system (l)			

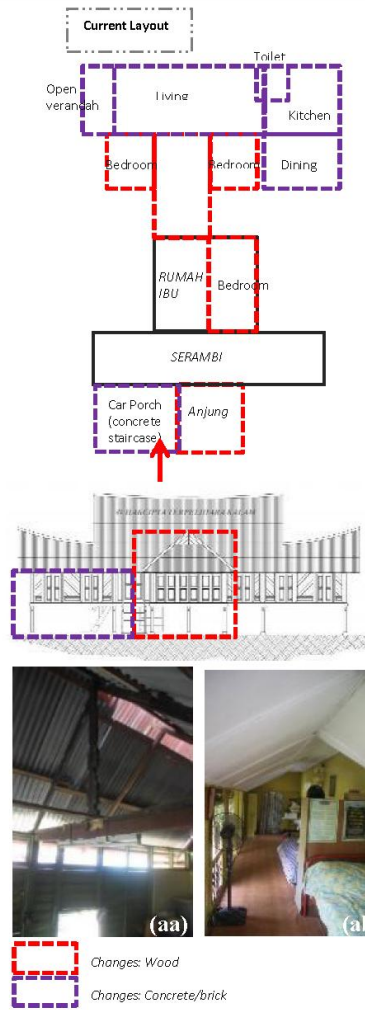




11.	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES					OVERALL CHANGES PATTERN	
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original		Current Condition
(Category B) HB2	<b>SERAMBI</b>	Open ( <i>Lepa</i> ), No <i>Anjung</i>	Closed, Add <i>Anjung</i> ( <i>limas</i> roof)	Timber	New Timber	Entertain male guest	Remain (Living area, sleeping area, study area and entertain guest)	FRONT AND BACK	
	Roof	Traditional	Refurbished (a)	Palm Leaves	Zinc (a)	-	-		
	Wall	No	New enclosure (b)	-	Painted in yellow and Brown colour (internal) (b)	-	-		
	Ceiling	No	Refurbished (c)	-	Ceiling board (c)	-	-		
	Floor	Traditional (Raised floor)	Remain	timber	Timber (covers with vinyl and rugs) (k)	-	-		
	Staircase	Yes	Refurbished (d)	Timber	Concrete staircase with mosaic and tiles with ceiling board (d)	-	-		
	Window	No	New window enclosure (e)	No	timber	-	-		
	Door	No	New door (f)	No	Timber	-	-		
	Others	Existing Serambi Tengah column	-Slanting roof porch -Existing <i>Serambi Tengah</i> column became weird (in the middle of the space) when <i>Anjung</i> was built. (g)	-	Cement render, no ceiling (car porch) (l)	-	Car porch (l)		
	<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	Remain	Timber	Timber	Sleeping area, entertain female guest	New bedroom with plywood wall (n)		
	Roof	Traditional	Refurbished (a)	-Palm Leaves	- Zinc -Roof structure has changed to connect to new kitchen area (a)	-	-		
	Wall	Traditional	Remain	-	-	-	-		
	Ceiling	No	Refurbished (c)	-	Ceiling board (c)	-	-		
	Floor	Traditional (Raised floor)	Remain	timber	Timber (covers with vinyl and rugs) (k)	-	-		
	Window	Traditional	Remain	timber	Remain	-	-		
	Door	Traditional	Remain	timber	Remain	-	-		
	Others	-	-	-	-	-	-		
	<b>RUMAH DAPUR</b>	On stilt	On the ground	Timber	Modern materials	Kitchen	New two back entrances, dining, kitchen, toilet , living, storage (o)		
	<i>Roof</i>	Traditional (Pitch roof)	Refurbished ( <i>Limas</i> and pitch roof) (a)	Palm leaves	Zinc (a)	-	-		
	<i>Wall</i>	Traditional	Refurbished (h)	timber	Half timber half bricks (h)	-	-		
	<i>Floor</i>	Traditional (Raised floor on stilt)	Refurbished (On the ground) (i)	timber	Concrete slab with cement render, covers with vinyl and rugs (i)	-	-		
	<i>Ceiling</i>	No	Refurbished (c)	-	Half Ceiling board (c)	-	-		
	<i>Staircase</i>	Yes	Refurbished (d)	Timber	Concrete with mild steel railing (d)	-	-		
	<i>Window</i>	Yes	Refurbished (j)	-	Glass louvres (j)	-	-		
	<i>Door</i>	Yes	Refurbished (f)	-	Timber door, mild steel grill (f)	-	-		
	<i>Others</i>				Drainage system (m)				

**FRONT AND  
BACK**

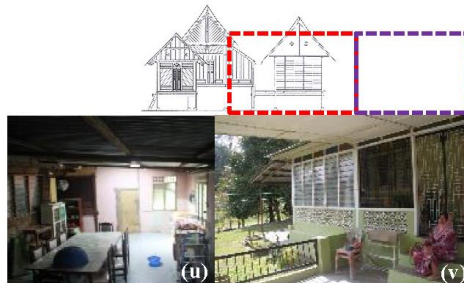
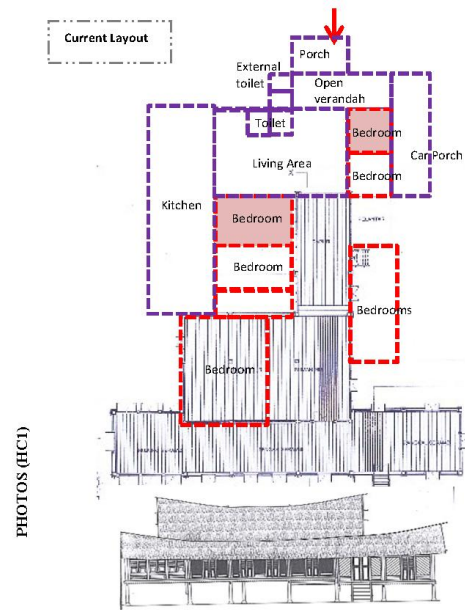




NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
12.	(Category C) HC1	SERAMBI	Long roof, slightly curved at both ends	Remain	Timber	Remain	Entertain male guest	Empty (k)	BACK AND SIDES
		Roof	Traditional	Refurbished (a)	Palm Leaves	Zinc (a)	-	-	
		Wall	Traditional	Remain	-	Painted in lime green (internal)(h)	-	-	
		Ceiling	-	Refurbished (b)	-	Ceiling board at Serambi Hujung only (b)	-	-	
		Floor	Traditional (Raised floor)	Remain	timber	Timber (covers with vinyl) (i)	-	-	
		Staircase	Traditional	Refurbished (c)	Timber	Concrete staircase with cement render (c)	-	-	
		Window	Traditional	Remain	Timber	Remain	-	-	
		Door	Traditional	Remain	Timber	Remain	-	-	
		Others	-	-	-	-	-	-	
		RUMAH IBU(R.I)	Long roof, slightly curved at both ends	Additional two bedrooms adjacent to R.I with slanting roof built on concrete stump (d)	Timber	Timber	Sleeping area, entertain female guest	Additional two new bedrooms with plywood wall (l)	
		Roof	Traditional	Refurbished (a)	-Palm Leaves	- Zinc -Roof structure has changed to connect to new kitchen area (massy) (a)	-	-	
		Wall	Traditional	Refurbished (e)	-	Take out back wall of Rumah Ibu to create a new link to the kitchen area, create opening for new bedroom entrances (e)	-	-	
		Ceiling	-	Refurbished (b)	-	Ceiling board, closed the loteng (attic) and decorative beams (b)	-	-	
		Floor	Traditional (Raised floor)	Remain	timber	Timber (covers with vinyl)(i)	-	-	
		Window	Traditional	Refurbished (d)	timber	Glass louvres (d)	-	-	
		Door	Traditional	Remain	timber	Remain	-	-	
		Others	-	-	-	Cut existing column in the bedroom (j)	-	-	
		RUMAH DAPUR	On stilt	On the ground	Timber	Modern materials	Kitchen	Five back entrances, dining, kitchen, toilets , living, storage (m)	
		Roof	Traditional (Pitch roof)	Traditional (Limas roof) (f)	Palm leaves	Zinc (a)	-	-	
		Wall	Traditional	Refurbished (g)	timber	Half timber half bricks, vent block, green paint (g)	-	-	
		Floor	Traditional (Raised floor on stilt)	Refurbished (On the ground) (h)	timber	Concrete slab with cement render, covers with vinyl and rugs (h)	-	-	
		Ceiling	-	Refurbished (b)	-	Ceiling boards (b)	-	-	
		Staircase	Traditional	Refurbished (c)	Timber	Concrete staircase (c)	-	-	
		Window	Traditional	Refurbished (d)	-	Glass louvres (d)	-	-	
		Door	Traditional	Refurbished	-	Timber door, mild steel grill	-	-	
		Others	-	New covered car park on the side	-	Drainage system (n)	-	-	

(Category C)  
HC1

BACK AND  
SIDES



NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES AND ALTERATION						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
13.		<i>Serambi</i>	-	-	Timber		Entertain male guest	Empty (occasionally used) (t)	
(Category C) HC2 (Recently refurbished in May 2013)		Roof	Traditional	Refurbished (a)	Palm Leaves	Red metal deck (h)	-	-	
		Wall	Traditional	As original	-	Painted in cream and brown (internal) (i), demolished wall to make a bigger space (j)	-	-	
		Ceiling	-	Refurbished (b)	-	Ceiling board (hide decorative rafter (k)	-	-	
		Floor	Traditional (Raised floor)	As original	timber	Timber (covers with vinyl) (l)	-	-	
		Staircase	Traditional	As original	Timber	Remain but with addition of concrete slab at stairhouse (m)	-	-	
		Window	Traditional	As original	Timber	As original	-	-	
		Door	Traditional	As original (New knob)	Timber	As original	-	-	
		Others	-	-	-	-	-	-	
		<i>Rumah Ibu</i>	Long roof, slightly curved at both ends	As original	Timber	Timber	Sleeping area, entertain female guest	Additional two bedrooms including <i>Kelek anak</i> (u)	
		Roof	Traditional	Refurbished (a)	-Palm Leaves	Red metal deck (h)	-	-	
		Wall	Traditional	As original	-	-	-	-	
		Ceiling	-	Refurbished (b)	-	Ceiling board (k)	-	-	
		Floor	Traditional (Raised floor)	As original	timber	Timber (covers with vinyl) (l)	-	-	
		Window	Traditional	As original	timber	Glass louvres (n)	-	-	
		Door	Traditional	As original	timber	As original	-	-	
		Others	-	-	stone	New concrete footing (o)	-	Underneath space as storage, access from the kitchen area (v)	
		<i>Rumah Dapur</i>	On stilt	On the ground	Timber	Modern construction (Bricks and cement render)	Kitchen	back entrance, dining, kitchen, toilet , living, storage, bedroom (w)	
		<i>Roof</i>	Traditional (Pitch roof)	Refurbished (slanting roof) (c)	Palm leaves	Red metal deck (h)	-	-	
		<i>Wall</i>	Traditional	Refurbished (d)	timber	Bricks, timber, vent block, peach paint (p)	-	-	
		<i>Floor</i>	Traditional (Raised floor on stilt)	Refurbished (On the ground) (e)	timber	Concrete slab with cement render, covers with vinyl (q)	-	-	
		<i>Ceiling</i>	-	Refurbished (b)	-	Ceiling boards (k)	-	-	
		<i>Staircase</i>	Traditional	As original	Timber	As original	-	-	
		<i>Window</i>	Traditional	Refurbished (f)	-	Glass louvres (n)	-	-	
	<i>Door</i>	Traditional	Refurbished (g)	-	Timber door, mild steel grill (r)	-	-		
	<i>Others</i>				Drainage system (s)				

(Category C)  
HC2  
(Recently  
refurbished in  
May 2013)

BACK





NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
14.	(Category D) HD1	<b>SERAMBI</b>	On stilt and long roof type	As Original	Timber	As Original	Entertain guest	Abandoned	FRONT, SIDE, BACK
		Roof	Traditional	Refurbished (a)	Zinc	Zinc	-	-	
		Wall	Traditional	Remain	Timber	As Original	-	-	
		Ceiling	No	-	-	-	-	-	
		Floor	Traditional	As Original	Timber	As Original	-	-	
		Staircase	Traditional	As Original (decayed)	Timber	As Original(decayed)	-	-	
		Window	Traditional	As Original	Timber	As Original but painted (f)	-	-	
		Door	Traditional	As Original	Timber	As Original	-	-	
		Others		As Original					
		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As Original but changes due to additional space	Timber	As Original	Sleeping area, entertain guest	Abandoned	
		Roof	Traditional	Change according to the additional space on the left with different shape of roof (a)	Zinc	Zinc	-	-	
		Wall	Traditional	Expand on the left (b)	Decorative timber panel	As Original	-	-	
		Ceiling	No	-	-	-	-	-	
		Floor	Traditional (Raised floor)	As Original	Timber	Timber	-	-	
		Window	Traditional	As Original	Timber	As Original	-	-	
		Door	Traditional	As Original	Timber panel	As Original	-	-	
		Others	-	-	-	-	-	-	
		<b>RUMAH DAPUR</b>	On the ground	On the ground	Timber	Modern construction and finishes	Kitchen	Abandoned	
		Roof	Traditional (Pitch roof)	As Original	Zinc	Zinc	-	-	
		Wall	Traditional	Refurbished (c)	Timber	Concrete block and vent blocks (g)	-	-	
		Floor	Traditional (raised floor on stilt)	Refurbished (on the ground) (d)	Timber	Concrete slab with cement render (h)	-	-	
		Ceiling	No	No	-	-	-	-	
		Staircase	Yes	Yes	Timber	As Original	-	-	
		Window	Traditional	Refurbished (e)	Timber	Refurbished (i)	-	-	
		Door	Yes	Yes	Timber	As Original	-	-	
		Others							

PHOTOS (HD1)

PHOTOS



NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES				OVERALL CHANGES PATTERN		
			FORM		FABRIC			FUNCTION	
		Original	Current Condition	Original	Current Condition	Original	Current Condition		
15.	<i>Serambi</i>	<i>Serambi Tengah, Serambi Hujung and Serambi Pangkal</i>	<i>Serambi Pangkal</i> was not reassembled (a)	Timber	Timber	Entertain male guest	Abandoned (q)	FRONT and BACK	
		Roof	Traditional	Refurbished (b)	Palm Leaves	Zinc(g)	-		-
		Wall	Traditional	Refurbished at <i>Serambi Pangkal</i> (c)	-	Painted in white (internal) (h), replaced with normal horizontal plank at <i>Serambi Pangkal</i> (c)	-		-
		Ceiling	-	-	-	-	-		-
		Floor	Traditional (Raised floor)	As original	timber	As original	-		-
		Staircase	Traditional	Refurbished (d)	Timber	Remain but with addition of concrete stairs and slab at stair house (d)	-		-
		Window	Traditional	As original	Timber	Remain but horizontal timber nailed across the opening (maybe to strengthen from skewed) (i)	-		-
		Door	Traditional	Refurbished (e)	Timber	Normal vertical timber plank (e)	-		-
		Others	-	-	-	Missing part of decorative elements (j)	-		-
		<i>Rumah Ibu</i>	Long roof, slightly curved at both ends	As original	Timber	Timber	Sleeping area, entertain female guest		Abandoned (q)
	Roof	Traditional	Refurbished (b)	-Palm Leaves	Zinc(g)	-	-		
	Wall	Traditional	Refurbished (c)	-	Plywood painted in yellow (k), replaced with normal horizontal plank on both sides elevation (c)	-	-		
	Ceiling	-	-	-	Clothes (l)	-	-		
	Floor	Traditional (Raised floor)	As original	Timber	As original	-	-		
	Window	Traditional	As original	Timber	No window (m)	-	-		
	Door	Traditional	Refurbished €	Timber	Half top original, half below replaced with plywood (n)	-	-		
	Others	-	-	stone	New concrete footing (o), Underneath Storage made from normal horizontal plank and horizontal timber nailed to existing column to make a storage (p)	-	Underneath space as storage (p)		
	<i>Rumah Dapur</i>	On stilt	Missing, cannot be traced (f)	Timber	-	Kitchen	No		
	<i>Roof</i>	Traditional (Pitch roof)	-	Palm leaves	-	-	-		
	<i>Wall</i>	-	-	Timber	-	-	-		
	<i>Floor</i>	Traditional (Raised floor on stilt)	-	Timber	-	-	-		
	<i>Ceiling</i>	-	-	-	-	-	-		
	<i>Staircase</i>	Traditional	-	Timber	-	-	-		
	<i>Window</i>	Traditional	-	Timber	-	-	-		
	<i>Door</i>	Traditional	-	Timber	-	-	-		
	<i>Others</i>	-	-	-	-	-	-		

**FRONT and BACK**



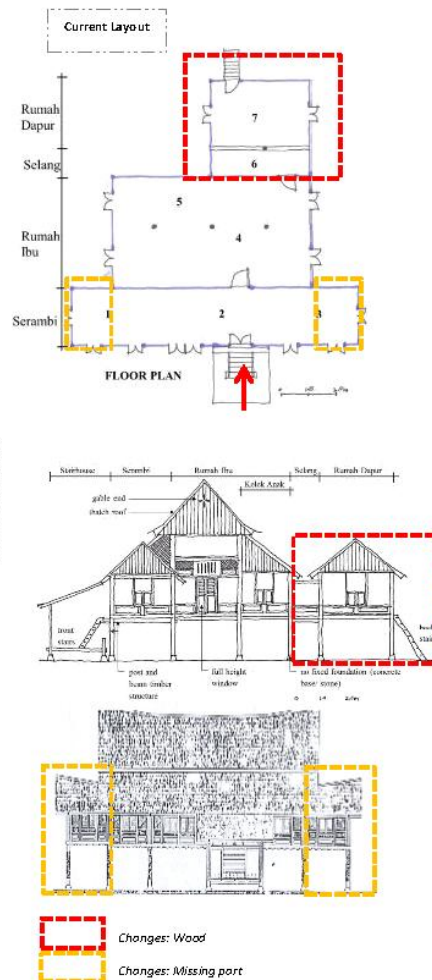


NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
			Original	Current Condition	Original	Current Condition	Original	Current Condition	
16.   <									

(Category D)  
HD5  
(dismantled  
and  
reassembled to  
another place)

FRONT and BACK

PHOTOS(HD5)



NO	NEGERI SEMBILAN TMH	TYPOLOGY REMAINS	CHANGES						OVERALL CHANGES PATTERN
			FORM		FABRIC		FUNCTION		
		Original	Current Condition	Original	Current Condition	Original	Current Condition		
17.		<b>SERAMBI</b>	<i>Serambi Tengah</i>	<i>Addition of Serambi Hujung, Serambi Pangkal and Anjung (a)</i>	Timber	Timber	Entertain male guest	Abandoned (l)	
		Roof	Traditional	As original	Tiles	Tiles	-	-	
		Wall	Traditional	Refurbished (a)	-	New timber at <i>Serambi Pangkal, Hujung and Anjung</i> extension. Painted in white (internal), replaced with normal horizontal plank on right elevation, plywood wall for one room (d)	-	-	
		Ceiling	-	-	-	-	-	-	
		Floor	Traditional (Raised floor)	As original	Timber	Timber (covers with vinyl) (e)	-	-	
		Staircase	Traditional	As original	Timber	Stair house zinc roof with concrete slab (f)	-	-	
		Window	Traditional	As original	Timber	As original	-	-	
		Door	Traditional	As original	Timber	As original	-	-	
		Others	-	-	Colourful decorative suspended column ( <i>buah butun</i> ) and column	As original	-	-	
(Category D) HD9 (dismantled and reassembled to another place)		<b>RUMAH IBU</b>	Long roof, slightly curved at both ends	As original	Timber	Timber	Sleeping area, entertain female guest	Abandoned (l)	
		Roof	Traditional	As original	Tiles	Tiles	-	-	
		Wall	Traditional	As original	Decorative wall panelling	Remain but missing one part of it, cream paint at bedroom (g)	-	-	
		Ceiling	-	-	-	-	-	-	
		Floor	Traditional (Raised floor)	As original	timber	Timber (covers with vinyl) (e)	-	-	
		Window	Traditional	As original	timber	As original	-	-	
		Door	Traditional	As original	timber	-	-	-	
		Others	-	-	Colourful decorative <i>Tiang Seri</i>	As original	-	-	
		<b>RUMAH DAPUR</b>	On stilt	On the ground	Timber	Modern material	Kitchen	Two bedrooms, toilet (external), kitchen, dining, living, two side entrances (m)	
		<i>Roof</i>	Traditional (Pitch roof)	Refurbished (Jack roof)	-	Zinc (h)	-	-	
		<i>Wall</i>	Traditional	Refurbished (a)	timber	Mixed of full brick wall and Half zinc half brick, vent block (i)	-	-	
		<i>Floor</i>	Traditional (Raised floor -on stilt)	Refurbished (On the ground) (b)	timber	Concrete slab with cement render (j)	-	-	
		<i>Ceiling</i>	Traditional	-	-	-	-	-	
		<i>Staircase</i>	Traditional	As original	Timber	As original (decayed)	-	-	
		<i>Window</i>	Traditional	Refurbished (c)	-	Glass louvres (k)	-	-	
		<i>Door</i>	-	-	-	-	-	-	
		<i>Others</i>	-	-	-	-	-	-	





#### 6.4.1 Changes in the *Serambi* Typology

As explained in Chapter 2, the NSTMH's *Serambi* has a basic rectangular form that supports a low lean-to roof called a *Serambi Tengah* (commonly found in a basic house) (Table 2.1). Normally, a *Serambi Hujung* and *Serambi Pangkal* would be added on both the right and left of the *Serambi Tengah* according to the status of the owner. This addition created a curved roof on both sides. From the observations conducted on site, changes in the *Serambi* typology were quite common in the NSTMHs. The data in Table 6.2 below further illustrates the changing patterns in terms of the form, fabric and function of the *Serambi* area.

##### **Form**

From the data gathered, the *Serambi* was considered the greatest change made to the form, whether or not the house owner lived in the house. Traditionally, the original form of the *Serambi* was built on stilts with a long roof that curved slightly at both ends. The majority of the house owners have changed the *Serambi* form to reflect their status, either by having a *Serambi Pangkal*, *Serambi Hujung* or even an *Anjung* as well (Figure 6.5). Most of the house in the *kampung*, even those that were not surveyed, have also had changes made in the *Serambi* area. This also reflects what has taken place at the level of the *kampung* in general. The addition of these three spaces depends on how the *Tukang* (carpenter) constructs it. Various changes were found: either an open *Serambi* (*Lepa*) or a closed *Serambi* in the cases of **HA2**, **HA4**, **HB1** and **HB2**, the addition of an *Anjung* in the middle of the *Serambi Tengah*, only a *Serambi Pangkal* or only a *Serambi Hujung*. This could be determined by looking at the jointing system, the roof structure and the rafters, the shape of the column and its footing and the most important thing, the fabric. The fabric reveals the character of the facade through its carving or decorative elements, including the windows and the door.

Besides that, when changing the *Serambi*, the staircase was also sometimes relocated and replaced with a concrete staircase, as had happened to **HA2**. The new enclosure of the wall for the *Serambi* was sometimes, for various reasons, not well constructed, as seen especially in **HA4**. The addition of an *Anjung*, in **HB2**, for

instance, was not suitable where the existing *Serambi* column was an obstruction in the middle of the *Serambi* and *Anjung* space (Table 6.2, 11, g).

The most major changes could be seen when the roof was refurbished and changed from original material such as *atap nipah* (palm leaves) to new, modern materials. These changes affect the form and characteristic of the original long roof which slightly curved at both ends (Table 6.2: 1(k), 3(m), 4(s), 5(k), 6(n), 7(p), 8(n), 9(q), 10(q), 11(r), 12(o), 13(x), 14(k), 15(x)). This also involves changing the type of roof construction, which most of the owners do not bother or know about. This results in them not respecting the old carpentry works of the past *Tukang*. The *Serambi* also have a different character when the owners have built a foyer with modern construction and materials (Table 6.2: 2(r), 3(m), 6(n), 7(q,r), 11(r,v)).

The *Serambi* is the main facade of the NSTMHs, and the loss of character from its original form hides the importance of its original function as well as exposing the difficulty of differentiating it from other types of vernacular Malay architecture for the young generation.

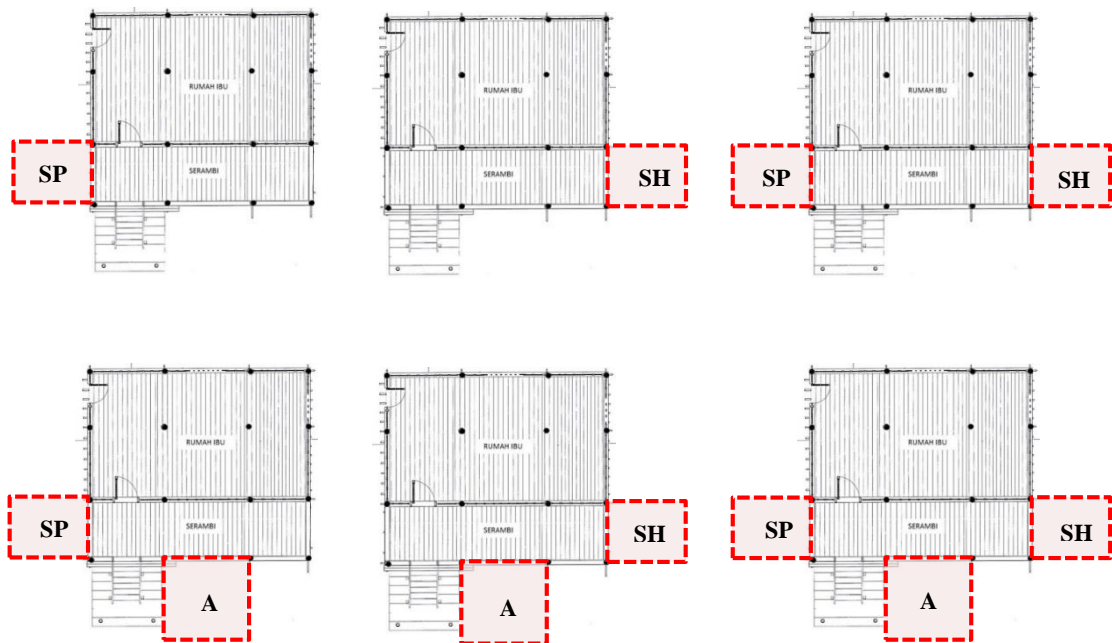


Figure 6.5: Possible changes to the *Serambi* (SP-Serambi Pangkal, SH-Serambi Hujung and A-Anjung)

## Fabric

The fabric refers to the main elements that comprise the skin of the building. Disturbance to the original fabric is the main challenge in the conservation of heritage buildings; the NSTMHs are no exception. The original fabric of the TMHs is natural materials like timber (wall and structure), palm leaves (roof) and natural stone (footing). As identified in Table 6.2, most of the changes to the NSTMHs have involved the use of new materials. These new fabrics are further explained below in respect of each of the elements affected:

The house type was obviously seen through its roof form. A change from the original palm leaves to zinc or metal decking is quite common nowadays. When this change is made, the structure and form of the roof will automatically be changed too. This may further damage the condition of the structure (Table 6.2: 7(r,s,u), 2(aa), 11(ac), 12(z), 13(ac), 16(s)).

In some of the houses the *Serambi* has already been refurbished with new material, even though it was originally made from timber. The new timber can be clearly seen by the construction techniques applied, especially when the *Serambi* has been extended. Only four houses that were originally open with a low wall (*lepa*) have been closed with a new enclosure, including a wall, windows and a door. These were **HA2**, **HA4**, **HB1** and **HB2**. The owners have personally influenced the choice of wall pattern by using either diagonal, horizontal or vertical timber, all common depending on the owner's budget. A diagonal arrangement may create decorative patterns, although this is not always in the context of the original Rumah Ibu wall and may therefore appear contradictory. The only obvious changes that were not properly carried out are to **HA4**. Here, the owner has simply covered the *Serambi* area with normal horizontal timber planks that were nailed to the existing structure and hidden the beautiful decorative beam.

Furthermore, the changes also relate to the colour of the house and the walls. In the past, traditional houses were not painted. They were just the natural colour of timber. The past generation often treated the timber with recycled engine oil to avoid termite attacks. Based on the observations on site, it is quite surprising that some of



the houses have been painted in various colours: royal yellow (**HA2**), blue and white (**HA3**), light yellow and brown (**HA7**) and green (**HA6**). In some, the owner has not finished painting the wall, as can be seen in Table 6.2: 2(s,v,x,y,aa). In most cases, this change was decided by the owner's children but the owner permitted it. For example, **HA6**'s son is an architect and, surprisingly, he advised her to paint it; previously the house was painted in white and yellow. This reflects how the young generation perceive and value the houses. This has also been the case with **HA2**. The owner does not bother about the changes and lets her son do whatever is 'good' for the house. That is why the house has changed from the original design. The open *Serambi* has been changed to a closed *Serambi*. There is a modern porch with a concrete staircase and glass louvre windows have been used in the original *Rumah Ibu* as well as in the *Serambi* area. In the case of **HA3**, this was carried out because of her daughter's marriage. This shows the limited knowledge amongst the house owners about the value of the houses and their significance.

Traditionally, the NSTMHs were built without ceilings. In the past, the owners sometimes put a cloth ceiling up just to protect the house from bird droppings. Currently, some of the house owners have refurbished with a permanent form in timber, plywood or cement board (Table 6.2: 1(o), 5(s,t,u), 6(t), 8(r,q), 11(t,x), 13(ah)). This reduces the heat to the *Serambi* area, especially when the roof coverings have been changed to zinc or metal decking. However, the ceiling covers the decorative rafters, which were previously exposed. The other reason was to cover up the roof structure (batten, rafter, beam), which was disturbed (changed and damaged) with the addition of an *Anjung* or a *Serambi Pangkal* and *Serambi Hujung*.

The original floors of the *Serambi* area have not been changed much. Most of them were covered with various colours of vinyl and were still considered to be in good condition (Table 6.2: 2(v), 3(p,r), 4(u), 5(u), 6(t), 7(u), 8(r), 10(w), 11(t,ab), 12(aa), 13(ah)). The staircase has normally been changed from timber to concrete as it is easy to maintain, according to some of the owners. If the timber staircase can still be used, they have just replaced its lower part with concrete steps or a platform. Sometimes, the new staircase was finished with colourful tiles or was colourful from the outset.

With the new enclosure (from open to closed *Serambi*), a new type of window was normally put in according to the year of the addition. Some of these were in timber (long or short) although this was not the original design, and others used glass louvres of various sizes (Table 6.2: 2(r,u), 7(r,s,t)). Some of them even put in stained glass on top of the window openings.

Adding a brand new area (foyer) in the main entrance of the *Serambi* creates a different character for the NSTMHs. This area was normally open and furnished with modern materials such as concrete with cement render or tiles, neo-classical columns and a balustrade, and it was also covered with a metal decking roof (Table 6.2: 2(r), 3(m), 4(ad), 6(m,n,p,q), 7(p,q,r) 13(ad,ae)). The addition of this area sometimes hides the original fabric of the *Serambi*. The intersection or the connection between the original and the new fabric was not matched and this creates more problems (Table 6.2: 2(u), 4(aa,ab), 6(q,t), 7(r,s,u), 9(u,v)). Not only that, the construction of the extension does not respect the original fabric at all.

## **Function**

Nowadays, some of the house owners do not use the *Serambi* as it was used before. Some of them have totally closed the area and it cannot be accessed by the guest or even themselves because it is untidy, as has been the case with **HA4**. Some have just left the space empty (without furniture and accessories) as most of the time the house owners utilised the ‘new’ *Rumah Dapur* area at the back of the house. The original function of the *Serambi* was transferred to this ‘new’ area as most of the house owners created this area to entertain and to receive male and female guests. It was part of a bigger modernisation process to create a ‘new’ living area, a dining room, bedrooms and more toilets with modern facilities. In the end, most of them use the *Serambi* only occasionally, especially during school or festive holidays such as Eid Mubarak. At these times their children and grandchildren will visit, and they will sleep in it and utilise it. This is especially the case for some of the house owners in categories A and C.

#### 6.4.2 Changes in the *Rumah Ibu* Typology

*Rumah Ibu*, as mentioned in Chapter 2, is the main space that highlighted the importance of the mother of the house compared to *Serambi* and *Rumah Dapur*. The size of the space determined its significance to the whole house (Figure 2.6). The survey shows that most of the houses have retained the original typological form of the *Rumah Ibu*. Only certain houses, like **HA5** and **HA7**, have changed the physical appearance of the *Rumah Ibu*, with new spaces attached.

##### Form

The *Rumah Ibu* have not changed much in their actual form from the original design except to **HD1** (additional space access from *Serambi* with different roof shape) (see Table 6.2: 14 (j)). Most of them remain on stilts. The form has only been affected when the fabric has changed as well as the function.

##### Fabric

The most common change to the fabric of the *Rumah Ibu* was the wall, especially when a new extension was made to the *Rumah Dapur*. This involved the demolition of the back wall of the *Rumah Ibu* to enlarge the opening and access to the *Rumah Dapur*. When this was carried out, the roof structures were automatically changed too (Table 6.2: 2(x), 7(y), 10(x,z), 11(z), 12(w)). Originally, no permanent wall was built in the *Rumah Ibu*. The house owner would build a partition in plywood to create a bedroom when their children were married. Some of the house owners have totally changed the perimeter wall of the *Rumah Ibu* with a common horizontal plank to allow new modern glass louvres to be fitted. For the floor, the owner normally covered the original timber floor with colourful vinyl to make it more comfortable. The roofs of the *Rumah Ibu* were also changed to zinc and a normal ceiling was installed to make it look tidy and clean.

##### Function

Nothing much has changed from the original function of the *Rumah Ibu* as most of the house owners have kept them as they were. The huge area of the *Rumah Ibu* was rarely used nowadays as most of the time the owners used the spaces in the ‘new’ *Rumah*

*Dapur*, where there are bedrooms, a living room, dining room, a kitchen and a bathroom.

### **6.4.3 Changes in the *Rumah Dapur* Typology**

The *Rumah Dapur* is on the back of the house, as mentioned in Chapter 2 (Table 2.1). These parts of the NSTMHs were identified as the favourable typology that faces the obvious changes and challenges. The survey showed that its original typology changed from it being built on stilts to being on the ground, and the size and shape of the plan were different. Mostly, this depends on the needs of the owners. None of the houses have kept the original form of the *Rumah Dapur* intact.

#### **Form**

The most obvious and heaviest change to occur in the NSTMH form concerned the *Rumah Dapur*. This area was now totally different in terms of the traditional character as well as the fabric and new function added to it, especially the roof and the construction system. There were various type of extensions and these vary from one house to another (Table 6.2: 1(o,p,t,u), 2(t), 3(u), 4(s), 5(j,l), 6(o,r,s), 7(o), 8(x), 9(r,s), 10(o,r), 11(q,u,y,af), 12(p,r,s,t,v,y), 13(x,y,aa), 17(o)).

#### **Fabric**

Where the form has changed, the fabric follows, introducing more new materials to the owner's individual taste. The important thing is, they can afford it. As with the *Rumah Ibu* and *Serambi*, this involves modern construction techniques and materials such as concrete, brick, cement, vent block, glass windows, tiles and neo-classical columns (Table 6.2: 1(p), 2(t), 4(s), 5(l), 6(o,s), 7(o), 9(s), 10(s), 11(y), 12(r), 13(aa),17(o)). With the current lifestyle, the new spaces were made comfortable only through the use of electrical appliances such as fans or air-conditioning units, mounted either on the wall or the ceiling. Grills were also used in the windows and doors for safety reasons.

## Function

As mentioned earlier, this ‘new’ *Rumah Dapur* was totally new and was based on the new needs of the house owners. Traditionally it acted as a spacious kitchen area but now it was very compact and the new spaces were altogether under one ‘new’ roof. Private bedrooms, a separate living room and dining room, toilets and a kitchen were common features found in this ‘new’ area of the *Rumah Dapur*. Sometimes the layout does not really work as they have not been well planned compared to the traditional *Rumah Dapur*. A drainage system has been introduced to this ‘new’ extension as a new element but it is not connected to any proper drainage system outside the property (Table 6.2-1(i), 2(m), 4(o), 7(e,m), 8(m), 9(g), 10(l), 11(m), 12(n), 13(s)).

### 6.5 Observation on the Case of the Dismantled and Reassembled NSTMHs: *Rumah Tukang Kahar (HD5)* and *Rumah Maimunah Yaakub (HD9)*

The relocation of some NSTMHs was part of the renovation process and presents a very different set of approaches and challenges. This observation happened coincidentally during the fieldwork and it was a unique experience for the researcher to see the reality of how it took place. This is the main reason why the researcher wanted to highlight these two projects as part of the research context in the conservation of the NSTMH. The relocation of the *Rumah Tukang Kahar (HD5)* and *Rumah Maimunah Yaakub (HD9)* to other areas were beyond the researcher’s expectation and the changes made to the house need to be indirectly discussed here.

Briefly, the *Rumah Tukang Kahar (HD5)* was first bought by an individual (E5) prior to it being handed over to the Negeri Sembilan Museum (NSM) to become a gallery. This house was chosen because of its significance as a famous *Tukang*’s house, who also built the Old Palace of Seri Menanti, Kuala Pilah. According to the Director of the NSM, it was agreed that the new location of the house would be beside the Old Palace compound, part of the museum site. As for the second project, *Rumah Maimunah Yaakub (HD9)*, this house was also bought by an individual, the director of the As Sofa Islamic Higher School (*Sekolah Tinggi Islam As Sofa*), in Rembau, Negeri

Sembilan. According to Mr Yusoff (the person in charge), the intention was to convert this house into a guest house in the same area as the higher school.

### 6.5.1 Rumah Tukang Kahar (HD5)

#### Brief Description of the House

This house was built in 1880 by the *Tukang* himself, known as Tukang Kahar (Figure 6.6). He died at the age of 60. As a well-known *Tukang*, he made beautiful and intricate carvings in various parts of the house such as at the head of the staircase, in the beams, the rafters, the wall panels, the columns, the doors and so on. It took longer to complete than the construction of a normal building as he built the whole thing by himself. He was also the *Tukang* of the *Old Palace of Seri Menanti* (1902) which was gazetted as National Heritage and remains one of the tallest and largest timber palaces in the old world (Rasdi, 2012).

This **HD5** represents the high status of the owners. It was built with 20 columns (*Rumah Tiang 20*) and the design was based on the *Kitab Tajul Muluk* (an old reference book on the traditional rules and regulations of building a house). This house was first moved in the 1910s and was taken down bit by bit rather than being lifted up, as is normal practice these days. The relocation was due to its unsuitable condition, which was affecting the health of Tukang Kahar's daughter. The first changes took place when the main original part of the house (the *Serambi Hujung* and *Serambi Pangkal*) was not reassembled due to the builders being unable to recreate its original form. Some parts were kept underneath the house for quite some time until it was transferred again to a new site in early 2013. The house was quite difficult to find after the researcher had decided to choose it as one of the samples, as it had already been transferred (Figure 6.7). The chronological changes to the house are shown in Table 6.3.

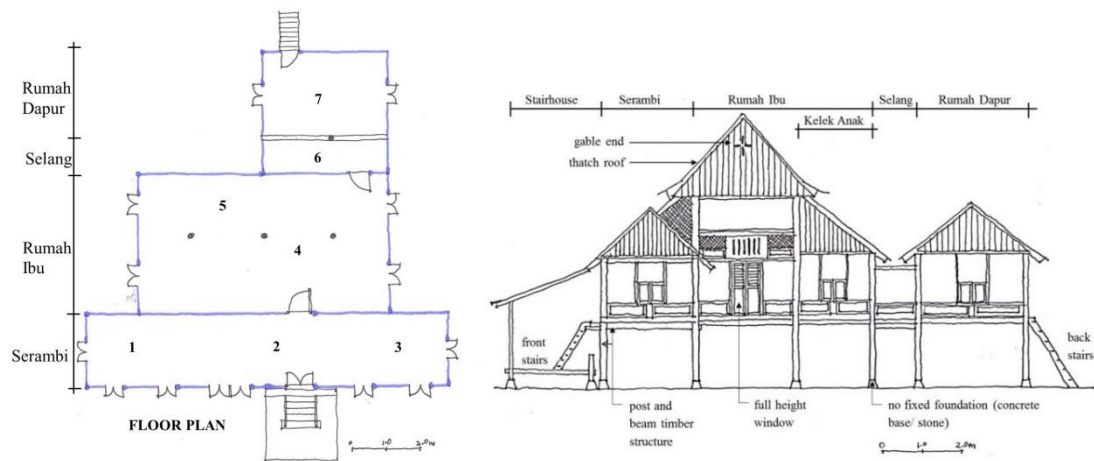


Figure 6.6: Original layout plan (left) of *Rumah Tukang Kahar*, Negeri Sembilan (1-Serambi Hujung, 2-Serambi Tengah, 3-Serambi Pangkal, 4-Rumah Ibu, 5-Kelek Anak, 6-Selang, 7-Dapur) and the side elevation (right).

Source: Author (2014).



Figure 6.7: *Rumah Tukang Kahar*, Negeri Sembilan before 2012 (above), after it was taken down in 2013 (below left) and a recent photo taken in 2014 (below right)

Source: Negeri Sembilan Museum (2012)-above, Author (2013 & 2014)-below

Table 6.4: The Chronological Changes to the House

Dates	Events
1880's	House built
1910s	The house first moved to the new site (Not known when the house reassembled).
1969	The deterioration of <i>Pangkal Serambi</i> and <i>Hujung Serambi</i> (laid under the house and not reassembled during the 1910 transfer process) Replaced kitchen with concrete block and timber plank. Replaced the wall type on left elevation ( <i>Janda Ria</i> to <i>Tindih Kasih</i> ) with additional small window.
1970	<i>Rumbia</i> Attap was taken down and replaced by zinc roof. Wall partition built ( <i>Rumah Ibu</i> ) due to the marriage of his adopted child. No more extension being made after that.
2010	Abandoned
2013	Sold to the Negeri Sembilan Museum to become a gallery and moved from the site. Pending for budget to re-assemble the house - predicted for early 2014(interviewed with Drs Shamsudin on 6/11/2013)

(Used with permission from Sulaiman, M.S (2014)

### The Dismantling Process

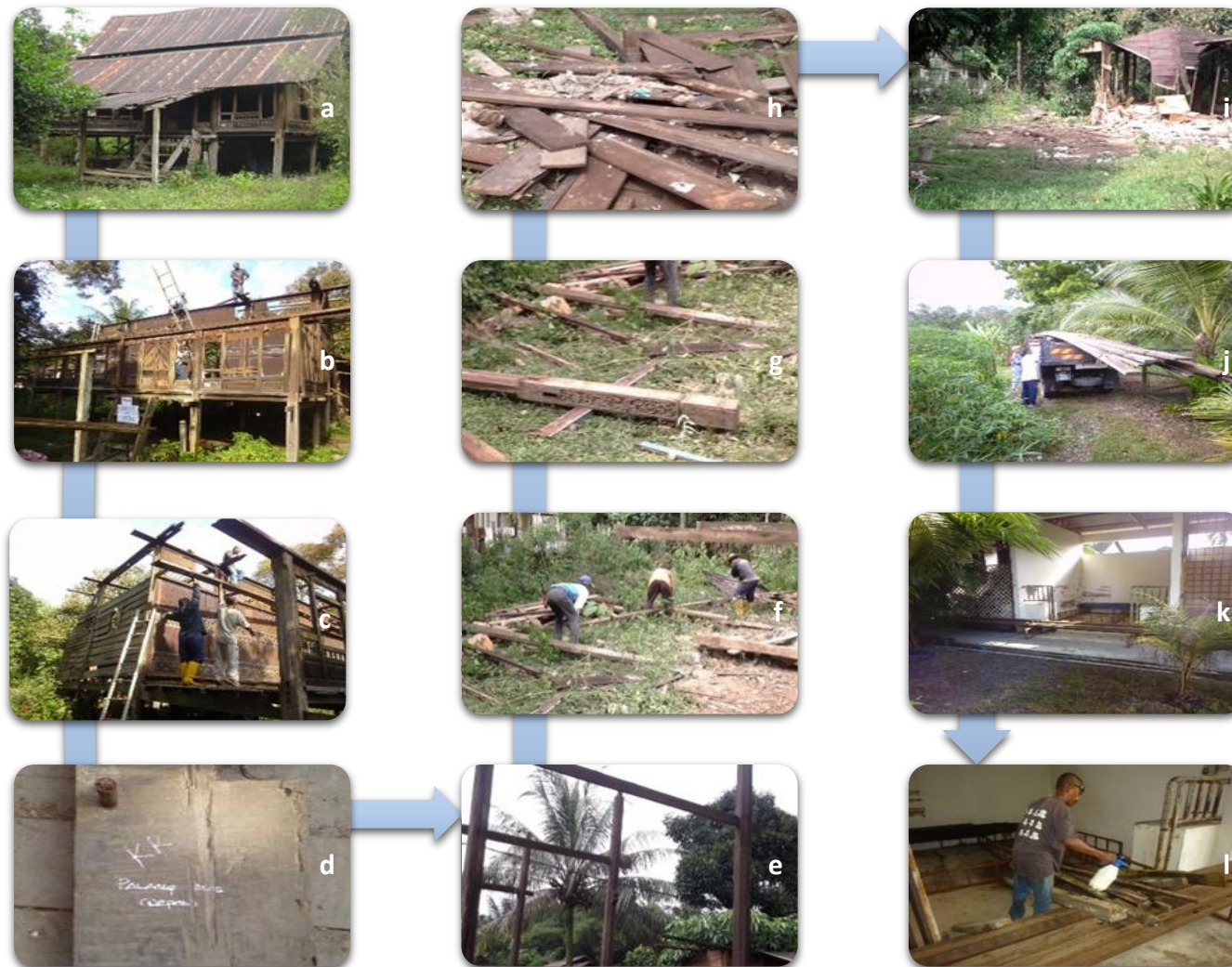
Most of the photos of the process of dismantling the house were provided by the officer in the NSM who was directly involved in the project. The photos were received during the pilot study undertaken in 2013 and via email as the project progressed until 2015. The photos in the project report were taken in December 2012, prior to the commencement of the project. According to the NSM, the project was supposed to be completed in 2013 but was delayed after the house was dismantled. Budget constraint was the main issue here, forcing them to wait for more than a year before reassembling the house at the end of 2014 and before it was finally completed in early 2015.

All the house elements were stored in the museum's store at the back of their office, which was also in the same compound with the new site for the house (beside the Old Palace of Seri Menanti). According to the Director of the NSM, the same contractor was appointed to dismantle and reassemble the house as they were already familiar with it. Although the house was measured and a measured drawing report was produced by KALAM, it was never used for guidance or reference. The house was not surveyed prior to the start of the project.

The photos provided by the museum, although not providing a completely comprehensive overview, do assist in helping to interpret what was taking place on the site. The researcher was not on the site during the dismantling process as it took place



prior to the pilot study being undertaken. The observation began after the photos were received from the museum and were interpreted wherever they provided relevant insight into the implementation of conservation work for the NSTMH in general, and also looking into the changes that had happened throughout the process. All of the processes involved in the dismantling of the house are described in Figure 6.8. Further findings were also analysed as key observations of this project after the reassembly process had taken place.



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Figure 6.8: : Dismantling process: *a)* The house *b)* Use common ladder *c)* Taken down the long beam at *Rumah Ibu* *d)* Tagging process (use white marker) *e)* Remove column and upper beam of *Rumah Ibu* *f)* Team work *g)* decorative front column *h)* Segregated the timber, unused timber *i)* Left the modern *Rumah Dapur* (kitchen) *j)* lorry was used to transfer the timber) *k)* Storage area near Old Palace of Seri Menanti) *l)* Spray timber protector from further damage  
Source: Negeri Sembilan Museum (2013)

According to Figure 6.8, the dismantling process for this house started from the roof, building envelope (wall), floor and, lastly, the column, beams and concrete footings. Then, all elements of the house were transferred by lorry to a different location for storage. All the works were carried out by only a handful of workers, without the correct attire for the work in hand. Ordinary ladders were used for ease of accessing the upper level. The most obvious method of tagging can be seen in photo (d) where they only used white marker to mark the timber elements according to their placement. Other than that, all elements were segregated, together with the unused timber. The *Rumah Dapur* (built on ground with modern materials) was left for cleaning later, prior to being stored accordingly. Then, all elements of the house were sprayed with timber protector to protect them from further damage until the time came to reassemble them.

### **The Reassembly Process**

When the researcher returned to undertake the real fieldwork from June to August 2014, the house had still not been re-erected. According to an interview with the Director of the NSM, the reassembly process was going to take place in September and would be completed by the end of 2014. The researcher could not wait for the house to be completely reassembled due to time constraints but the director emailed all of the photos by early March 2015. Based on the information received from the museum, the house was reassembled at a cost of MYR100,000.00 (£ 20,000.00).

The new drawing was used to reassemble the house as in Figure 6.9. Apart from the scientific value, it was quite exciting to look at and interpret the photos of how the contractor had reassembled the house (Figure 6.10). All the findings were later explained as the key observation of the overall processes.

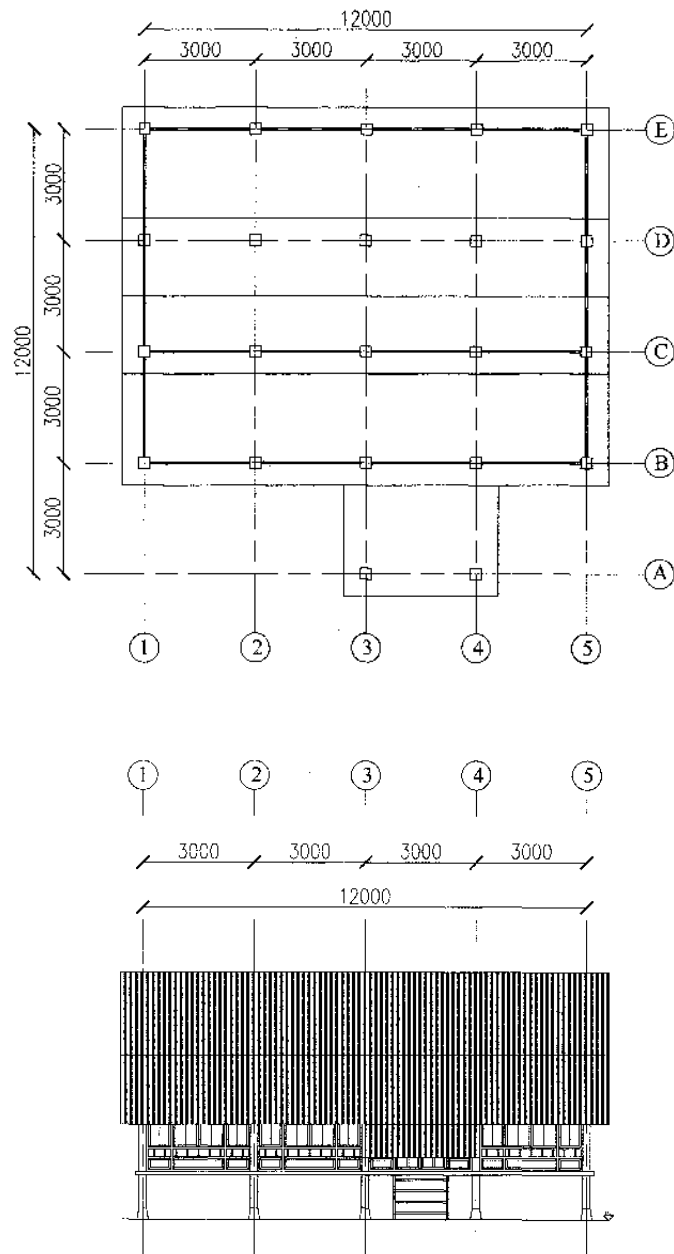


Figure 6.9: The new plan (*above*) and elevation (*below*) were used in the reassembly process of the *Rumah Tukang Kahar*.  
Source: Negeri Sembilan Museum (2015)



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Figure 6.10 : The reassembly process of the *Rumah Tukang Kahar* (HD5): a) All the columns were laid out according to the plan b) All the footings were put up to rest the column on it. c) The main structure were erected with roof structure d) The *Rumah Tangga* components were installed at their original positions. e & f) All the original floor beams were placed in their position g) Nails were used to tie the column with horizontal beam member. h) All the floor board were installed i) Missing member (hole) i) New roof structure to support new zinc roof k) Original carving was painted with new colour l) New red zinc roof were installed.

Source: Negeri Sembilan Museum (2013)

## Key Observations

From the photos and information obtained through emailing the officer, it can be observed that:

- a) New location: Set back between an existing building (Old Palace of Seri Menanti (OPSM)) and the Museum Office, as the OPSM has been gazetted as National Heritage (Figure 6.11) were considered or not. Has it received approval from the National Heritage Department, as the OPSM is a National Heritage?
- b) Orientation: a NSTMH normally faces the river or a paddy field and has as its background a hill, like the OPSM and *Serambi Pangkal* or *Hujung* will face *Qiblah* (Makkah). The current orientation is quite awkward (Figure 6.12). This did not happen probably due to site constraint. The intention in bringing the *Tukang Kahar*'s house was to use it as a gallery rather than to expose the living experience in the past.
- c) Probably no ritual ceremony was done for its re-erection.
- d) The traditional method of constructing the house does not apply to this house as *Tiang Seri* is not being erected as it was before (detailed in Chapter 2 (2.3.8)). The placement of *Tiang Seri* on the right position is also questionable (Figure 6.13).
- e) A completely new approach was taken to erect the house by jointing all of the columns in a line of five before it was supported by a cross timber to strengthen the structure (see Figure 6.14). The easy way to do this would have been to nail it to the original structure, which damages the existing fabric.
- f) Misplaced the position of the carving beam in the *Serambi* area (Figure 6.15).
- g) Setting out the layout of the footing was considered in the place by having the grid line according to the measurement as in the normal construction of the setting out of a new building. The location of the footing automatically put at the intersection of the grid line with new concrete pad (underneath is rough stone acting as a base) (Figure 6.16).
- h) The works were handled by unskilled Indonesian workers, not locals, and no experienced *Tukangs* or even modern carpenters were employed.
- i) The original *Serambi Hujung* and *Serambi Pangkal* were once again not reassembled and no reason was given.
- j) The workers used the original material (timber floor or structure) as a temporary structure while doing the works (Figure 6.17). No scaffolding was used.
- k) After the main structures were erected, paint was applied to give a new look to the house (Figure 6.18).
- l) The use of red zinc material for the roof is also questionable.



m) A temporary roof was not used to protect the house.

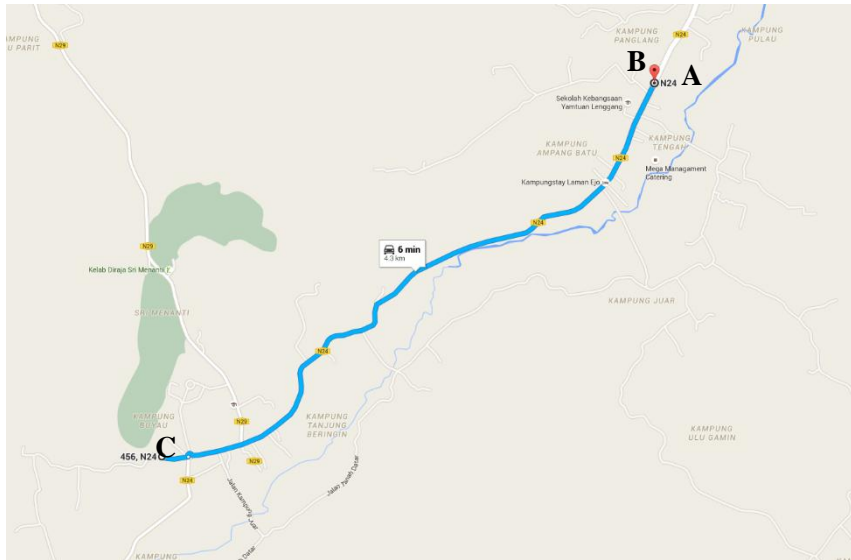


Figure 6.11: The original location (A) of the house before being transferred to its second location in the 1910s (B) and the current relocation site (C) of *Rumah Tukang Kahar*, in the compound of the Old Palace of Seri Menanti, Kuala Pilah, Negeri Sembilan.

Source: <https://www.google.co.uk/maps/dir/> (2015)

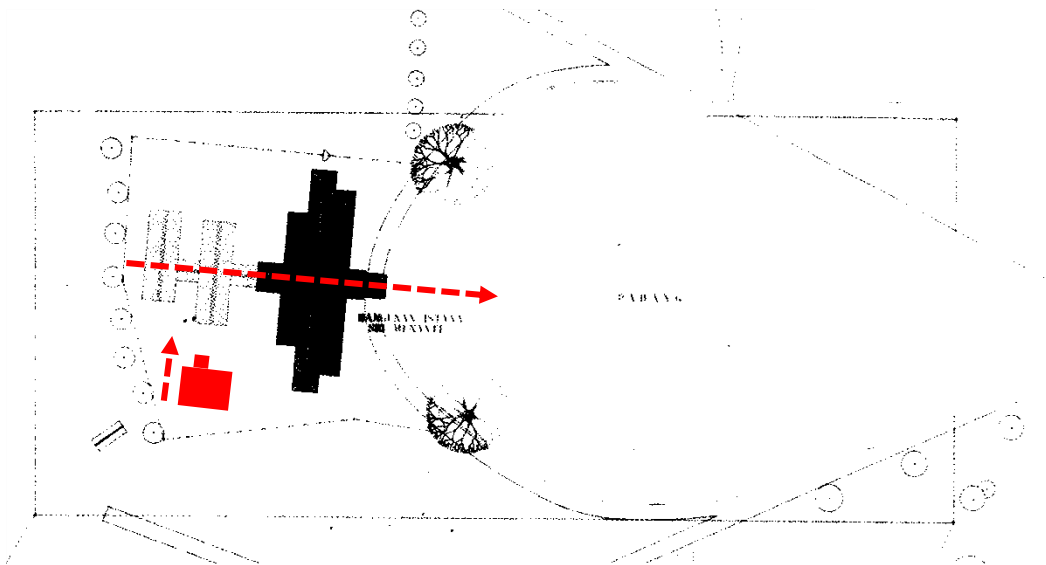


Figure 6.12: The new orientation of *Rumah Tukang Kahar* (red) facing the side of the Old Palace. The location was supposed to follow exactly parallel to the Old Palace, facing the open space as it should be.

Source: KALAM (2009)

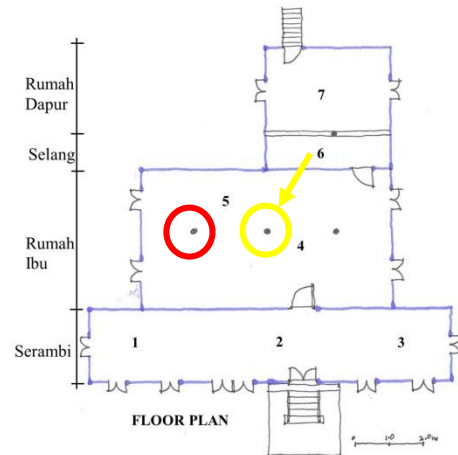


Figure 6.13: The wrong placement (red circle) of the *Tiang Seri* of the house as it should be placed in the centre of the house (yellow arrow).  
Source: Negeri Sembilan Museum (2015)



Figure 6.14: Nailed the new timber to the original structures, to tie them together before lifting up as one (damaged the original structure and fabrics (red arrow)). The traditional method of erecting the house was not applied in this process.  
Source: Negeri Sembilan Museum (2015).





Figure 6.15: The carvings in the original colour and actual position of the *Serambi*'s beam (facing inside) (left). The carvings were painted in timber colour and in the wrong position (facing outside) (right)



Source: *Negeri Sembilan Museum (2015)*.

Figure 6.16: The intersection of the grid line with new concrete pad (rough stone underneath acting as a base)

Source: *Negeri Sembilan Museum (2015)*

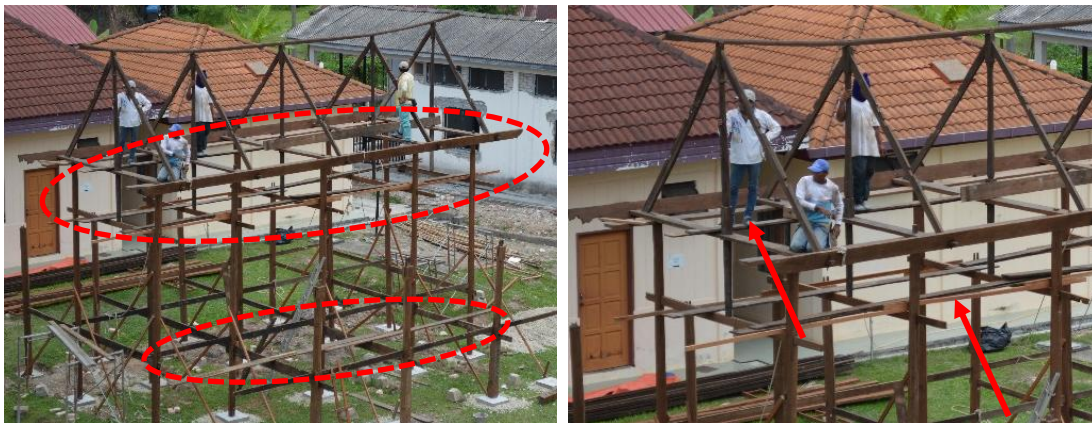


Figure 6.17: Use of original material (timber floor or structure) as a temporary structure (red arrow).

Source: *Negeri Sembilan Museum (2015)*



Figure 6.18: Paint was applied to give a new look to the house as a final product.  
 Source: Sulaiman (2015)

## 6.5.2 Rumah Maimunah Yaakub (HD9)

### Brief Description of the House

The *Rumah Maimunah Yaakub* (HD9) was built in the 1920s by a benefactor (Figure 6.19). The background of the previous owner was as a Muslim scholar and this is why this house became a place for villagers to learn about religious matters. From 1721 to 1826, this *kampung* was the site of the coronation of *Raja Rembau I* (Raja Melewar) (1721/22) and *Yang DiPertuan Besar Seri Menanti* (1765–1826), who were local rulers originally from Pagarruyung, Sumatera Barat. After the coronation, all of them moved to Seri Menanti, Kuala Pilah, which is known as the Royal Town of Seri Menanti. This house was built from the highest-quality local timber called *Chengal* and was one of the most lavish houses in the *kampung*.

There are about 20 pieces of beautiful decorative timber panelling separating the *Rumah Ibu* and *Serambi* areas (10 panels right, 10 panels left). Each was made manually and featured different patterns and designs. Each had its own character and was very unique (Figure 6.20). Besides that, there was a unique roof ridge design of a dragon made from cement on both edges of the *Serambi* and *Rumah Ibu* roof (Figure 6.29). This house was abandoned when the owner's mother passed away. The house was rented by an Indonesian worker prior to being sold. The tenant only occupied the *Rumah Dapur* area built on the ground. Later, it was bought by the founder of *Yayasan AsSofa* (Dato' Hj. Syeikh Muhammad Fuad) who also had a relationship with the



owners. For personal reasons, he initiated the process of having the house dismantled, transferred, relocated and assembled in another area at the Islamic High School (*Yayasan AsSofa*) in Rembau. The plan was for this house to become a guest house. The existing condition of **HD9** can be seen in Figure 6.21.

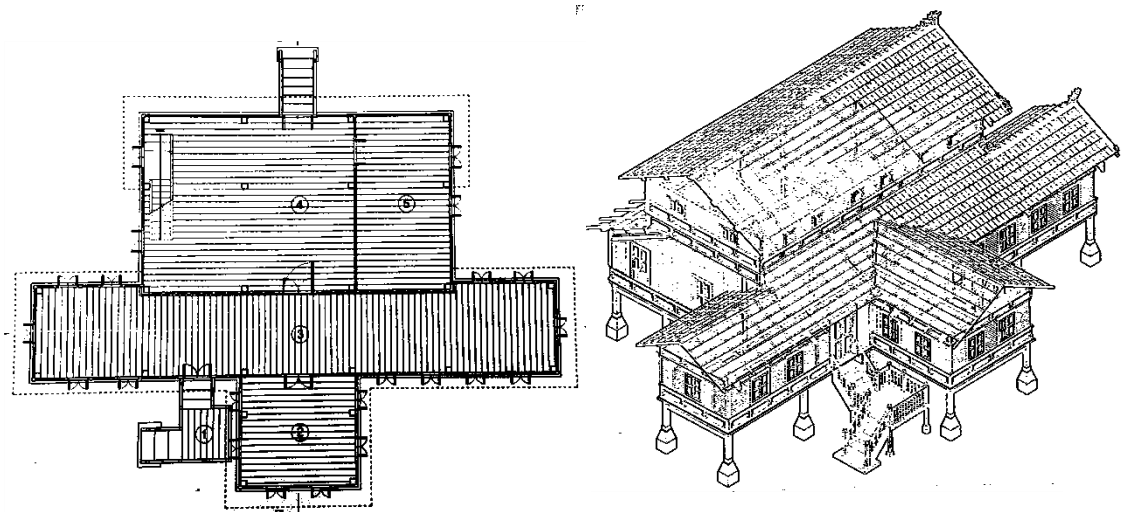


Figure 6.19: The layout plan and perspective of HD9.  
Source: KALAM (2014), Author (2014)

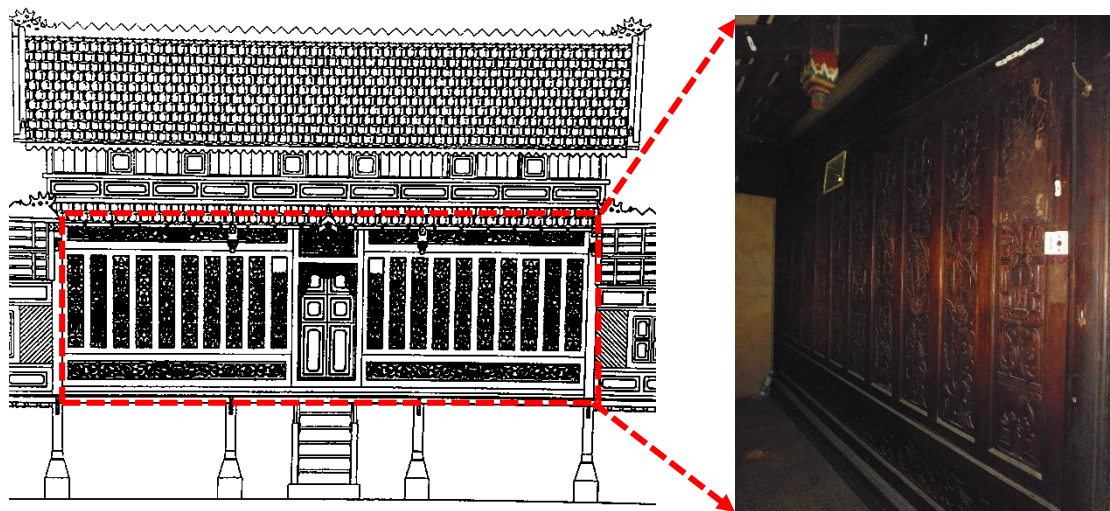


Figure 6.20: The 20 pieces of beautiful decorative timber panelling in HD9.  
Source: KALAM (2014), Author (2014)

## The Existing Condition of the house (before it was dismantled)



Figure 6.21 : Existing condition: a) The house (front view); b) Back view of the house (New *Rumah Dapur* on ground floor); c) Main entrance staircase with broken gutter; d) + i) New living area at *Rumah Dapur*; e) Decorative suspended column; f) Carving wood panelling between *Serambi* and *Rumah Ibu*; g) *Tiang Seri* at *Rumah Ibu*, timber floor covered with vinyl; h) New kitchen area; j) Termite attack on the *Rumah Dapur* staircase; k) decorative column at *Serambi* area; l) New room with plywood wall at *Serambi* area; m) Decorative architrave to *Rumah Ibu* with missing carving panel on the right; n) Bedroom at *Rumah Ibu* was painted in cream colour; o) Decorative painting at fascia board of *Rumah Ibu*.

Source: Author (2014)

## The Dismantling Process

The dismantling process of this house started on 26 June 2014 (Figure 6.22) and it had been completely reassembled in 15 days by 10 July 2014. The top-to-bottom approach was applied in this context. This may be considered a good approach which normally reflects the conservation works practised in Malaysia. Even if the existing roof is in good condition, a temporary roof structure should be installed as a first priority before any further work is carried out. It is essential to have this in place in order to protect the original fabric of the property from heavy rain, especially in a country with a tropical climate like Malaysia.

According to the workers, a sketch plan of the house was used at the site to guide them through the dismantling process. They manually made a proper drawing on A3-size paper as they were not given the proper measured drawing of the house. This manual plan was kept at their accommodation and they used only a sketched plan drawn on the back of an unused calendar (Figure 6.23). They used this plan to tag and record the elements of the house. Besides that, a black marker was used to tag all the structural elements (columns and beams, floorboards and wall panelling) according to the plan of the house (Figure 6.24). Although the house was measured and a measured drawing report was produced by KALAM, it was never used for guidance and reference purposes.



Figure 6.22: The date on which the dismantling process was started was written in marker on one of the gable ends of the house fabrics, stating '*mulai kerja bulan 6 tanggal 25*' in Malay/Indonesia language, which means '*work started on 25 June*'.

Source: Author (2014)





Figure 6.23: The original plan (manual) on A3 size (left) and the plan used on site (with calendar paper) (right). Both of them was drawn by the Indonesian worker.  
*Source: Author (2014)*



Figure 6.24: The tagging process was carried out by marking on the existing fabric with a marker.  
*Source: Author (2014)*

Generally, the work began with the dismantling of the roof structure of the *Rumah Ibu* and *Serambi* areas (roof tiles, battens, rafters, trusses, suspended column (*buah butun*) end gables) and the timber floor with the staircase of the *Loteng* space in the *Rumah Ibu* area (Figure 6.25). Then, the envelope of the house (exterior wall) of both areas as well as the internal decorative timber wall panel (Figure 6.26). Next, the *Serambi* and *Rumah Ibu* area floor timbers were dismantled before the main structure of the house (floor beams and columns) started to be lifted down.

All the elements were taken down part by part using a nylon rope (Figure 6.27). This is a traditional way of lifting up materials as well as all the main structure of the house. Other tools including a hammer and crowbar were used to remove nails. Although most NSTMHs were originally built without nails, this house was not, possibly due to its construction in the 1920s, at a time when nails were readily available.

Some of the existing fabric was damaged due to improper dismantling methods (Figure 6.28). The fabric had also decayed in certain parts due to attack by termites, beetles and also dampness because of leakage (Figure 6.29).

The main feature (Dragon head) that was dominant, located at the end of the roof ridge, was also taken down, but there is no plan for this to be reconstructed (Figure 6.30). It was made from concrete and cement. According to Mr Yusoff, they do not want any Chinese features to be part of the house. The concrete footings were also kept in the storage area.

All the material was stored temporarily in open storage under fruit trees within the house compound (Figure 6.31). Not all the materials were covered with plastic. Only the decorative wall panelling was covered, but this was only a partial and not a full covering (Figure 6.32).

Based on observation and conversations with the workers, they worked every day from 8 am to 5 pm (rest between 12.30 to 2 pm). This is because the new owner wanted to reassemble the house as quickly as possible after Eid Mubarak (in August 2014). There were seven workers commissioned to work on the project, but at times there were only four on site if others were pulled out to carry out urgent work in another region. It was quite a challenging experience due to the works taking place during the fasting month of Ramadhan.



Figure 6.25: The roof structure of *Rumah Ibu* and *Serambi* area was dismantled.  
*Source: Author (2014)*



Figure 6.26: The perimeter wall of *Rumah Ibu* and *Serambi* area was dismantled.  
*Source: Author (2014)*





Figure 6.27: Nylon rope was used as a traditional way of lifting down the entire wall.  
 Source: Author (2014)



Figure 6.28: The original fabrics sustained damage as a result of improper dismantling.  
 Source: Author (2014)



Figure 6.29: The fabrics were decayed due to attack by termites, beetles and dampness because of leakage.  
*Source: Author (2014)*



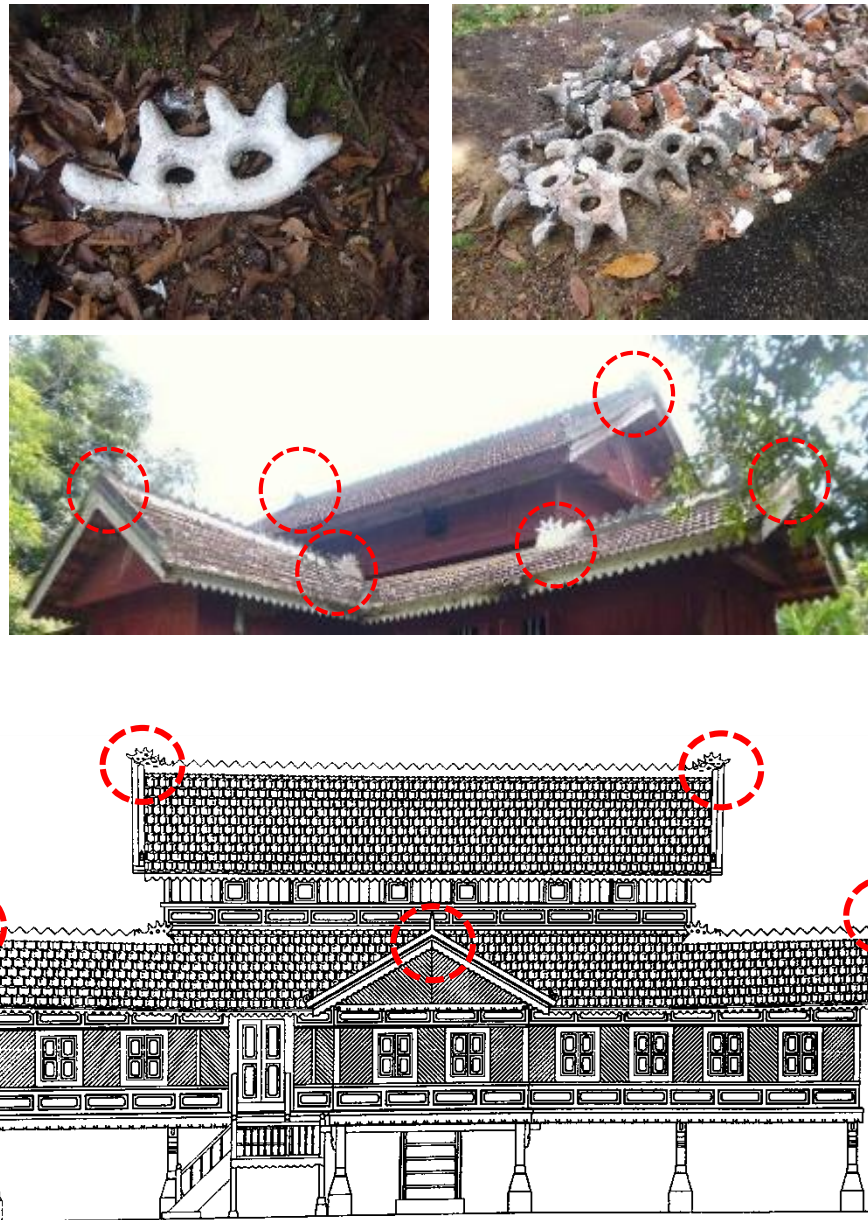


Figure 30: The main features (Dragon head) that was dominant, located at the end of roof ridge (red dotted circle) was also demolished and is not going to be reconstructed.  
Source: Author (2014), Drawing, KALAM (2013)



Figure 6.31: All of the material was stored temporarily in an open storage under fruit trees within the house compound

*Source: Author (2014)*



Figure 6.32: Only decorative wall panelling was covered but not fully all the time. Nails were used to affix the plastic to the timber panel.

*Source: Author (2014)*

A chronological summary of the observation on site (Dismantling) during the period 4 to 10 July 2014 is shown in Table 6.4:

Table 6.5: Chronological summary of the dismantling processes

Date	Work Description
26 June 2014 (Thursday)	<ul style="list-style-type: none"> <li>Start work</li> </ul>
4 July 2014 (Friday)	<ul style="list-style-type: none"> <li>I only notified about the work by calling the tenant.</li> <li>All the roof structures were taken down (Rumah Ibu and Serambi) as well as the <i>Loteng</i> (attic) floor and wall. (Figure 6.25).</li> <li>All the decorative features of dragon head (roof ridge) were demolished due to the need of lifting down the roof tiles.</li> <li>Many sizes of nail were found.</li> <li>Some of the roof structure was decayed.</li> </ul>
5 July 2014 (Saturday)	<ul style="list-style-type: none"> <li>The <i>Serambi</i> wall were taken down part by part (window panel, timber panel, fascia board, door, roof beam and etc.)</li> <li>Original timber was used as a tool to loosen the wall.</li> <li>The existing fabric was nailed by the workers with temporary new timber to tie them up from broken.</li> <li>Some of the floor beams (<i>Rumah Ibu</i>) was decayed due to dampness.</li> </ul>
6 July 2014 (Sunday)	<ul style="list-style-type: none"> <li>The main decorative wall panelling and the outer wall of <i>Rumah Ibu</i>.</li> <li>The right decorative panel was dismantled first from top to bottom (top panel, middle main panel and bottom panel). This wall panelling was not covered by any plastic.</li> </ul>
7 July 2014 (Monday)	<ul style="list-style-type: none"> <li>Not much work done.</li> <li>The decorative wall panelling was wrapped up with plastic to avoid damage from rain. (Figure 6.31).</li> <li>The wall on both sides of <i>Rumah Ibu</i> was taken down later in the afternoon.</li> </ul>
9 July 2014 (Wednesday)	<ul style="list-style-type: none"> <li>Dismantled timber floor at <i>Serambi</i> and <i>Rumah Ibu</i> area. All the timber floor was nailed and manually done using a crowbar.</li> <li>The roof beam at <i>Rumah Ibu</i> also was taken down (about 9 metres long)</li> </ul>
10 July 2014 (Thursday)	<ul style="list-style-type: none"> <li>All the timber floor, <i>Serambis'</i> columns and beams were dismantled.</li> <li>The toughest job was lifting up the main columns of <i>Rumah Ibu</i>. The workers did it the wrong way when dismantled the first part of the column. It was quite a heavy structure and only few of them were involved. The structure warped and almost broke as they could not manage to hold them up correctly. Luckily, no one was hurt.</li> <li>The rope was used to hold the structure from falling directly to the ground to avoid more members cracked or damaged.</li> <li>I suggested to the lead worker to dismantle the back row of the <i>Rumah Ibus'</i> column as they put more loads to the main structure. It worked when they did that and continued to dismantle one by one the main structure. They used the existing fabric to untie the structure. Plan below shows how they started taking down part by part of the main structures (Figure 6.33).</li> <li>In the afternoon, the <i>Tiang Seri</i> was the second to last structure taken down. It is supposed to be the last structure but it was not happening. At the end, all the structures were dismantled completely by late afternoon.</li> <li>Later, the cleaning works began. Some of the big size of the nail was found (see Figure 6.34). I insisted Mr. Hamdan (buyer's representative) to find the 'time-capsule' for the house. The location of the 'time-capsule' was found underneath the <i>Tiang Seri</i> column. The 10 cent coin stated "<i>STRAITS SETTLEMENTS TEN CENTS, 1919</i>" indicated the birth date of the house (Figure 6.35) This was a new experience to me as well as Mr. Yusoff</li> </ul>

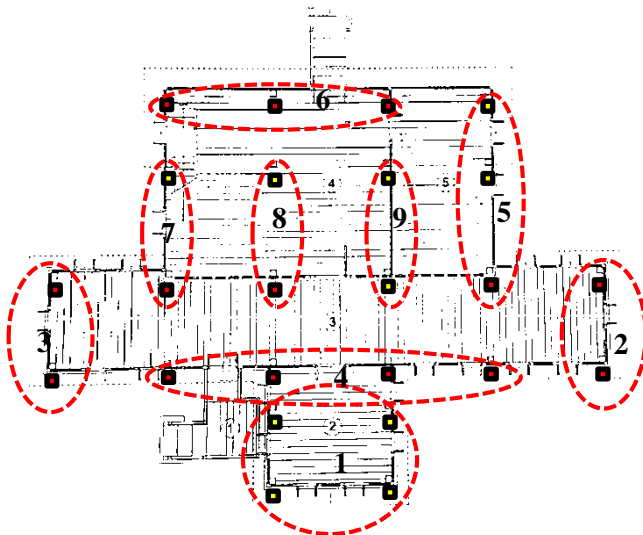


Figure 6.293: Plan shows the steps of the main structure (columns) being taken down part by part.

Source: KALAM (2013)





Figure 6.34: Various sizes of nails were found in this house and the use of hammer and crowbar to peel them out.

*Source: Author (2014)*



Figure 6.35: The 'time-capsule' of the house was found underneath the '*Tiang Seri*' which indicated the birth date of the house (1919).

*Source: Author (2014)*

## The Reassembly Process

The process of reassembly began in October 2014 and was completed in early January 2015. According to Mr Yusoff and the lead worker Mr Rahman, the new site was cleared after Eid Mubarak, July 2014. This allowed them to construct the concrete platform as the house base, according to the layout plan. A total of 24 new concrete footings were also made and located in the correct position before the house could be re-erected. This new site was situated at a higher level so that people would be able to see it from a distance (Figure 6.36). The people of the *kampung* who knew the house would be able to recognise it in spite of its relocation to a different area.

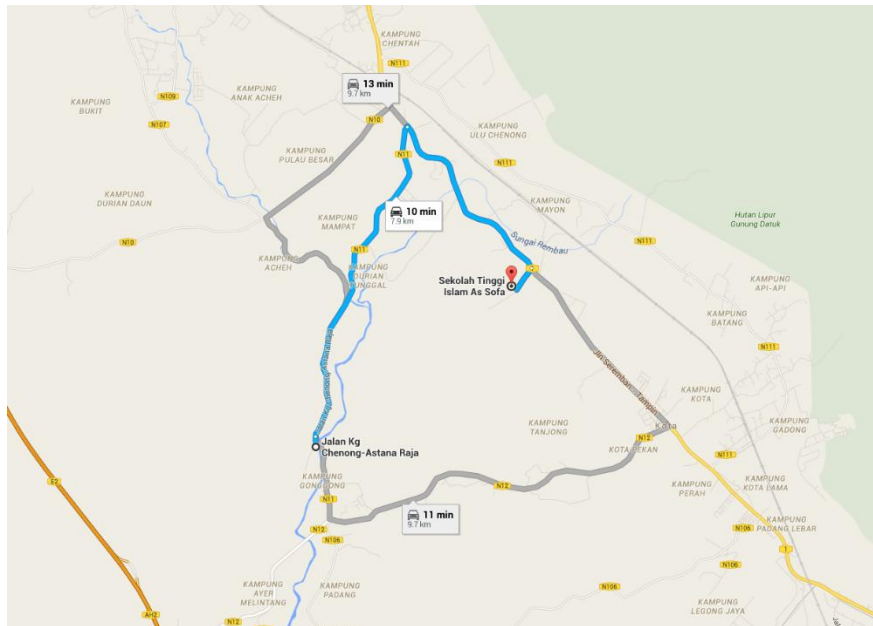


Figure 6.36: The original site (A) and new relocation site (B) of the HD9 about 8 km.  
Source: [https://www.google.co.uk/map/dir/2.515915,102.1157013/Sekolah+Tinggi+Islam+As+Sofa,+Cengkau Ulu,+71350+Kota,+Negeri+Sembilan,+Malaysia/](https://www.google.co.uk/map/dir/2.515915,102.1157013/Sekolah+Tinggi+Islam+As+Sofa,+Cengkau+Ulu,+71350+Kota,+Negeri+Sembilan,+Malaysia/)

Images of the reassembly process were received by email at the end of March 2015. The observations were made through looking at the images and some clarification of information was gathered through email with Mr Yusoff. Although the images show only the exterior of the house, it is possible to gain a rough overview of how the project was implemented.

From the on-site observation undertaken during the dismantling process and through images of the reassembly of the house, it is still possible to capture the differences. All the images serve as a very good indicator to show how things worked. The KALAM drawings were never used during either the dismantling or reassembly process. They also used the same plan as for *Rumah Tukang Kahar (HD5)* (Figures 6.23 and 6.37).



Figure 6.37: The same plan as for *Rumah Tukang Kahar (HD5)* was used to reassemble the house (*red dashes circle*)  
Source: Yusoff (2015)

As can be seen in Figure 6.38, there was no temporary roof used to protect the house before the reassembly process started. This was also the case in the previous project for **HD5**. The normal practice of conservation work in Malaysia in accordance with the Guideline in the Conservation of Heritage Buildings (GCHB) order is that protecting the original fabric from bad weather (heavy rain) must be a priority.

At first glance of the images of the reassembled work, it was expected, as reported by Mr Yusoff and Mr Rahman, that the house would look different in terms of scale and proportion, since they increased the height of the underneath space by about 10 feet (Figure 8.5). For a more detailed explanation, see Figure 6.37.





Figure 6.38:  
The reassembly  
process lasted  
from October  
2014 until  
January 2015.  
Source: Yusoff  
(2015)



- a) The new concrete footings and platform were built and completed before the reassembly process began. All of the structural elements were gathered at the site.
- b) The bottom of the existing column was altered for joining purposes with the new structure to increase the ceiling height of the underneath space.
- c) All the structures (main columns) were arranged in their position in the right orientation prior to being lifted up.
- d) The front column of *Anjung* was the first structure to be erected, followed by the others.
- e) After all of the main structures had been erected, the timber floor was installed in the *Rumah Ibu*, *Serambi* and *Loteng* areas.
- f) The roof structure was reassembled at the *Rumah Ibu* (*Loteng*) and *Serambi*.
- g) In order to tie them up (columns and beams), the existing structure was nailed with temporary timber to provide support, even though the house had been erected.
- h) The gap in the *Loteng* (attic) timber floor is the location of the staircase.
- i) The decorative wall panelling between *Rumah Ibu* and *Serambi* was reassembled.
- j) The suspended column (*buah butun*) of *Rumah Ibu* was reassembled, still in its original colour, prior to being repainted with shellac.
- k) The perimeter wall started to be reassembled at *Rumah Ibu* and *Serambi* and a view of the back portion of the house with original back entrance without an original staircase.
- l) The roof tiles at *Rumah Ibu* were installed. Nylon rope was used to manually lift up the roof tiles to roof level.
- m) The roof tiles of *Rumah Ibu* were completely reassembled without the original cement roof ridge (dragon pattern). Both walls (left and right of the *Rumah Ibu*) were left open to allow daylight to penetrate the interior of the house.
- n) The perimeter wall of the house was painted (shellac) in timber colour. A concrete platform base was built for the main new staircase.
- o) The new timber staircase was altered *in situ* (carpentry works).
- p) The new design of the staircase in timber was installed, totally different from the original (quite at odds with the character of the building).
- q) The house was completely reassembled in early January 2015.

## Key Observations

1. No proper working attire (i.e. no safety boots and helmets) or healthy and safety precautions.
2. In terms of proportion to overall appearance, out of scale or not proportionate?
3. The projection of the floor beam should be as original and balanced for both side, why has this happened? (Figure 6.39).



Figure 6.39: The unbalanced floor beam projections.

Source: Yusoff (2015)

4. A concrete platform as a base for the front staircase was built later. It was probably a last-minute decision where to put the staircase (Figure 6.40).



Figure 6.40: The concrete platform was added later (red arrow).

Source: Yusoff (2015)

5. The original column structure was reconfigured to increase the height of the underneath space (Figure 6.41).





Figure 6.41: The new columns were added to replace original, not in a single piece (*yellow arrow*) rather than made two pieces and joint back together (*blue arrow*).

Source: Yusoff (2015)

6. New timber was replaced on the right of the *Rumah Ibu* (Figure 6.42).



Figure 6.42: New timber was replaced. (*red arrow*).

Source: Yusoff (2015)

7. With no drainage system, there is a risk of landslide near the house as the land is not being protected by grass, etc. (the concrete platform will soon crack as a result of this) (Figure 6.43).



Figure 6.43: Potential risk of landslide (*arrow*).

Source: Yusoff (2015)

8. A process of trial and error was followed to install the new staircase by putting in too many columns to support (Figure 8.6).
9. Access to the house from the ground was by ladder only.
10. *In-situ* alterations of the new timber joint (column) (Figure 6.38 p,q).
11. The existing materials were not covered throughout the project (and were thus exposed to the rain) (Figure 6.38a).
12. Erection of the main structure (column), starting with the front side of the *Anjung* area (Figure 6.38d). Not in a traditional way of erecting the house (*Tiang Seri* is the main column and should be erected first, with others following afterwards).
13. Certain floor beams were replaced with a new timber structure following attack by termites and beetles. Some of them were reused (Figure 6.44).
14. The strength of the column extension is questionable in terms of distribution of the jointing patterns (Figure 6.45).



Figure 6.44: Reuse of the floor joist (attacked by beetles) (*see red dashes*)  
Source: Yusoff (2015)

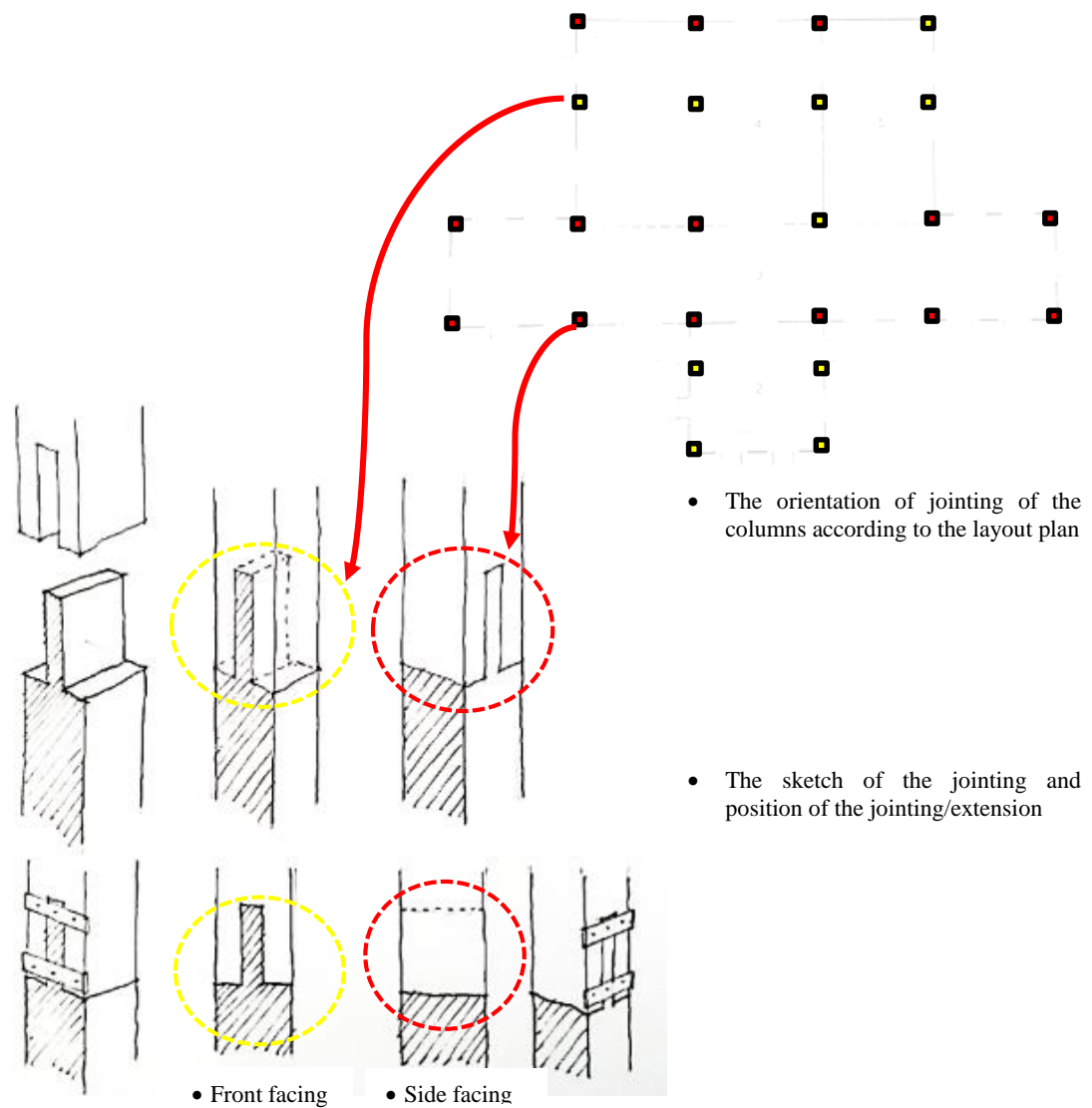


Figure 6.45: The extension and position of columns with different orientation (facing front-yellow and facing side-red) according to plan and type of jointing.  
Source: Yusoff (2015)

## 6.6 Chapter Summary

The survey reported on throughout Chapter 6 has demonstrated the significance of the changing patterns of the fabric analysed through a construct of cultural heritage (Figure 6.1) and has also provided physical evidence of the real situation facing conservation of the NSTMHs. The changes and alterations made to the original fabric of the houses have caused the authenticity of the houses' form, fabric and function to become diluted or even to disappear to varying degrees (Table 6.2). A new function has been introduced and this varies according to the type of extension, as long as it is able to accommodate the needs of the house owner. Most of the changes, especially those to the back, front, sides or underneath of the houses, have not been well planned in terms of space arrangement (Figure 6.4 and Table 6.2). The eclectic approach taken by house owners demonstrates their perception of the value of their houses. The balance of the intervention regarding these three elements (form, fabric and function) has given a direct visual interpretation to the house, both internally and externally. All of the approaches taken by the house owners have led to misunderstandings about the overall house typology. Here, education in heritage becomes critical to balancing the impact of the changes, which were driven by the owners' priorities in terms of their needs as well as by their budgets.

The use of new, modern materials could be considered acceptable amongst the house owners but has drastically changed the character of the houses due to the unavailability of original materials, traditional skills and joiners. Not only that, the change in the fabric also relates to the colour of the houses. Some of the houses have been painted in bright colours for no particular reason. This reflects the limitations of knowledge, understanding and awareness of heritage appreciation amongst the house owners. Although they realise the impact of the changes, they cannot relate this to the importance of conserving these traditional houses, especially for future generations. Some of them are not bothered about the changes at all.

A summary of the 15 cases of changes to *in-situ* TMHs in Negeri Sembilan and two cases of relocation is outlined in Table 6.5 below:



Table 6.6: Summary of changes to the surveyed NSTMHs.

Changes	Affected In-Situ (15 nos. of Negeri Sembilan TMHs)	Relocation (Dismantled/Reassembled) (2 nos. Negeri Sembilan TMHs)
<b>Form</b>	<ul style="list-style-type: none"> <li>• <i>Serambi</i></li> <li>• <i>Rumah Ibu</i></li> <li>• <i>Rumah Dapur</i></li> <li>• Four changing patterns: <ul style="list-style-type: none"> <li>• Back</li> <li>• Front and Back</li> <li>• Back and Side</li> <li>• All Sides + Underneath</li> </ul> </li> <li>• The changing of form due to the lack of knowledge and understanding of special characteristics of the Negeri Sembilan TMHs heritage.</li> </ul>	<ul style="list-style-type: none"> <li>• Only the existing <i>Serambi</i> and <i>Rumah Ibu</i> was reassembled. <i>Rumah Dapur</i> was not reassembled due to 1) no evidence or record to reconstruct. 2) built on ground with concrete and bricks (demolished) 3) purposely not to have it.</li> </ul>
<b>Fabric</b>	<ul style="list-style-type: none"> <li>• Change to new materials (zinc, metal deck, glass, new cheap timber, concrete, brick, vent block, ceiling board).</li> <li>• New paint colour.</li> <li>• Less comfort to the occupants when changing to new materials (zinc/metal deck) without a ceiling.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain the original materials (wall, floor and structure) but with some additional new materials, especially zinc roof (<b>HD5</b>) and all columns, staircase, concrete footing and concrete platform (<b>HD9</b>).</li> <li>• The wall was painted with timber shellac which cover the original colourful carving or artworks (inside and outside) for both <b>HD5</b> and <b>HD9</b>.</li> </ul>
<b>Function</b>	<ul style="list-style-type: none"> <li>• The new function of the main spaces: <i>Serambi</i> and <i>Rumah Ibu</i> (rarely used) and <i>Rumah Dapur</i> (as new kitchen, dining, living, sleeping area and entertaining guest).</li> </ul>	<ul style="list-style-type: none"> <li>• New used: <b>HD5</b> as a Gallery/Museum and <b>HD9</b> as a Guest House</li> </ul>

A common element among all of these houses is that people would make changes which in certain cases were very radical. In the case of many of the houses, the changes made deviate from the original fabric and add another new building at the back of the house. That is probably the ideal solution. They are using a ‘different language’ of a new building which has no common context with the original. In the other two cases, the house is changed completely through relocation. The benefit of this, for both of the projects (**HD5** and **HD9**), is that we are able to learn something from the dismantling and reassembly processes of the house, whether we interpret that as part of the challenge of conserving the house in order to find the right and best way to undertake the move, especially with regard to the joining elements, the sequence of construction or the durability of certain elements. It also involves the question of how

to choose new timber, especially when it comes to replacing the old timbers. These are the things that we can expect people to teach other people (lead by example). The fact that **HD5** is now a gallery and has an educational purpose can be expanded by correct conservation that shows how to appreciate this heritage in the right way. This should serve as an example of best practice for the conservation of the NSTMH.

This observation has told us something about how things happen in terms of the changes in form, fabric and function that affected both the *in-situ* houses and the relocation approach involving a dismantling and reassembly process. At the end of the day, it is about conservation. Some of the key findings regarding several critical observations in evaluating the changing pattern of the form, fabric and function of the NSTMH in this chapter will be discussed further in Chapter 8. It will encompass how this surveyed approach conserved the fabric, whether or not any major mistakes were made and how well the process was documented. It will also involve what we can learn about it – the original fabric – so that other people having to carry out repairs might learn from it in the context of relocation, sense of place and responsibility as well as the house owner's involvement.

In the next chapter, the principles, legislation and practices involved in the conservation of vernacular architecture in particular and historic buildings in general will be explored in the Malaysian as well as international contexts through a review of the documents in order to achieve the third research objective (RO3).

## **CHAPTER 7**

### **INVESTIGATING THE EXISTING CONSERVATION PRINCIPLES REGARDING TRADITIONAL TIMBER HOUSES IN THE MALAYSIAN AND INTERNATIONAL CONTEXTS.**

#### **7.1 Introduction**

This chapter addresses Research Objective 3 (RO3), which is to investigate the existing conservation principles regarding traditional timber houses, eventually concerning the Malaysian and international context. This chapter is organised starting with an overview of broad document reviews that related to the study of national and local heritage legislation and the analysis of findings. Then, the same goes for international documents before highlighted the initial and revising template that was derived from both analysis together with the chapter summary.

#### **7.2 Overview of the Document Reviews**

Before the analysis, the existing documents for the national (Federal), local (State) and international levels had to be collected and reviewed. All documents were identified that were aimed at developing a set of conservation principles for the NSTMH. In this research, the principle is more of a charter than a formal policy, as it concerns non-mandatory control, as illustrated in Figure 7.1.

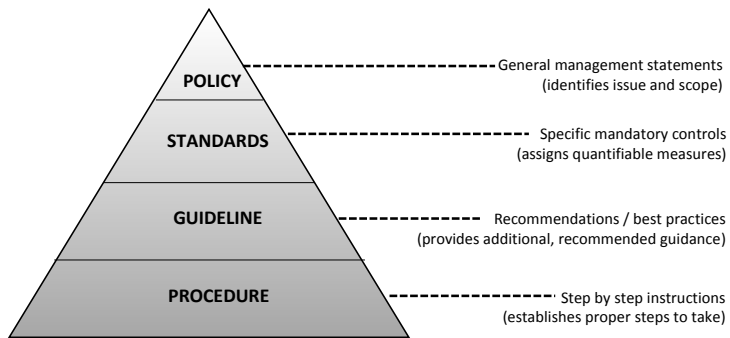


Figure 7.1: The pyramid diagram to differentiate the difference between policy and charters (guidance). (Source: Adapted from Bahadur, P. (2014).

According to the Cambridge Dictionary Online, a policy is defined as ‘a set of ideas or a plan of what to do in particular situations that has been agreed to officially by a group of people, a business organization, a government, or a political party’. This is more of a general statement that identifies certain issues and the scope of a policy. A charter, in contrast, is a written instrument (guidance) that highlights best practice or a set of recommendations for guidance. A charter may, for example, provide advice and direction on information aimed at resolving a problem or difficulty. The meanings may occasionally overlap, but charters are not legal documents. This is why a charter (principles) was chosen as the main contribution in this research to fill the gaps in the Negeri Sembilan area.

Document reviews method was chosen purposely to understand and identify any elements or statements mentioned, particularly regarding protection of the NSTMH or TMH or timber structures in any local acts and guidelines. Meanwhile, the international documents were reviewed in an attempt to identify any similarity context in terms of the protection of vernacular built heritage which could then be used as a basic framework for this research. All of the processes for review were conducted according to criteria in terms of common points shared, administration, implementation, management, enforcement, finance, etc. There were a total of 19 documents requiring review, comprising five national, six local and eight international (Table 7.1).

Table 7.1: List of all documents

<b>A Local</b>		<b>Code</b>
(i)	<b>State level</b>	
(a)	<b>Enactments:</b>	
1.	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988	<b>L1</b>
2.	Johore Enactment 1988	<b>L2</b>
3.	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	<b>L3</b>
4.	Sarawak Cultural Heritage Ordinance 1993	<b>L4</b>
5.	State of Penang Heritage Bill 2011 ( <i>Warisan Kerajaan Negeri Pulau Pinang 2011</i> )	<b>L5</b>
	<b>Guidelines:</b>	
6.	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	<b>L6</b>
<b>B National</b>		<b>Code</b>
(ii)	<b>Federal level</b>	
(b)	<b>Acts:</b>	
1.	National Heritage Act 2005 (Act 645)	<b>N1</b>
2.	Local Government Act 1976 (Act 171)	<b>N2</b>
3.	Town and Country Planning Act 1976 (Act 172)	<b>N3</b>
4.	Federal Territory Act 1982 (Act 267), and are only in Kuala Lumpur, Labuan and Putrajaya	<b>N4</b>
(b)	<b>Guidelines:</b>	
5.	' <i>Garispanduan Pemuliharaan Bangunan Warisan 2012</i> ' (Guideline in the Conservation of Heritage Buildings) 2012	<b>N5</b>
<b>C International Context- Relevant Charters and Principles (UNESCO / ICOMOS)</b>		<b>Code</b>
1.	Charter on the Built Vernacular Heritage (1999)	<b>I1</b>
2.	The Principles for the Preservation of Historic Timber Structure (1999), or the ICOMOS International Wood Charter	<b>I2</b>
3.	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	<b>I3</b>
4.	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	<b>I4</b>
5.	ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	<b>I5</b>
6.	Guideline on Education and Training in the Conservation of Monuments, Ensembles and Sites (1993)	<b>I6</b>
7.	ICOMOS Charter: Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage (2003)	<b>I7</b>
8.	Scottish Historic Environment Policy (2011)	<b>I8</b>

In Malaysia, any legal documents gazetted at national level are known as Acts but at local level, they are called Enactments. According to Idrus et al. (2010), there are four Acts – **(N1)**, **(N2)**, **(N3)** and **(N4)** – that are related to conservation in Malaysia at the national level. Five Enactments – **(L1)**, **(L2)**, **(L3)**, **(L4)** and **(L5)** – are mainly related to relevant states at local level (Table 7.1). Besides these, only two guidelines, one at national level **(N5)** and one at local level **(L6)**, were reviewed that were related to the requirement for the research. These two guidelines are more specifically to guide people involved in the conservation works of heritage buildings or conservation areas (implementation).

These documents were examined to identify if there is any statement about protecting and conserving the TMH in particular, not only in Negeri Sembilan. Then, to address the third research question, to investigate the existing conservation principles regarding traditional timber houses in the Malaysian and international context, all the potential statements were selected and analysed using a template analysis method (Chapter 4, section 4.5.3). The elements were determined and analysed throughout all the documents. A summary and findings of the template analysis are given in Tables 7.2, 7.5, 7.7 and 7.8 and Figures 7.1 and 7.2.

### **7.2.1 Local and National Heritage Legislation**

Referring to Table 7.1 (A & B), some states have their own heritage Enactments and these documents were reviewed to see how they relate to each other. First of all, as mentioned before, it has to be clarified whether there are any particular documents that focus directly on how to conserve the TMH. The fact, through literature and observations, is that none of the documents are directly about the TMH. Some states like Melaka, Johor, Sarawak, Sabah and Pulau Pinang have their general heritage Acts, while Negeri Sembilan does not (refer to interviews with **E15** and **E17** in Chapter 5). The selection of documents depends on their use and reflects the importance of knowing what other Acts contain and how other states have formulated their own versions. The TMH certainly is not referenced, but in general, it is crucial to see how heritage is recognised, what it represents, how it is protected and how the protection of that heritage is implemented.

These documents should assist this research to set principles for the conservation of the TMH in the particular state of Negeri Sembilan, working within the social and cultural context of Malaysia. It is important to know what other states have done even if this is not specific to traditional houses, and also to explore what can be done about TMHs, what the principles are, how the Acts are structured, whether they give priority to a particular type of heritage only, or whether they make a vision for planning reasons, or how well they integrate with local government policies (Table 7.2).

These documents were also validated and verified the current issues stressed by the experts interviewed in Chapter 5 and issues facing conservation of the TMH, particularly in the Negeri Sembilan region.

### **7.2.2 Analysis of Findings**

For the purpose of this research, only selected parts of the documents focusing on the conservation of heritage buildings and in particular relation to the TMH will be analysed, as shown in Table 7.2.

Table 7.2: Analysis of identification elements and their application in the Local and National heritage legislation.

NO	ELEMENTS	LOCAL (STATE LEVEL)					NATIONAL (FEDERAL LEVEL)						
		ENACTMENT			GUIDELINE		ACT		GUIDELINE				
		L1	L2	L3	L4	L5	L6	N1	N2	N3	N4	N5	
		Malacca Preservation and Conservation of Cultural Heritage Enactment 1988	Johore Enactment 1988, Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977), amendment No.2 of 2006	Sarawak Cultural Heritage Ordinance 1993,		Penang State Heritage Enactment 2011—Regulations Cultural Heritage and Natural Heritage Penang ( <i>Enakmen Warisan Negeri</i> )	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	National Heritage Act 2005 (Act 645)	Local Government Act 1976 (Act 171)	Town and Country Planning 1976 (Act 172)	Federal Territory Act 1982 (Act 267) for Kuala Lumpur, Labuan and Putrajaya.	<i>*Garis panduan Pemuliharaan Bangunan Warisan 2012*</i> (Guideline in the Conservation of Heritage Buildings) 2012	
1.	Purpose	/	/	/	/	/	/	/	/	/	/	/	11
2.	Interpretation / Definitions	/	/	/	/	/	-	/	/	/	/	/	11
3.	Administration:	-	-	-	-	-	-	/	/	/	-	-	3
	Establishment of Council	-	-	-	-	/	-	/	-	-	-	-	1
	Establishment of Committee	/	/	/	-	/	/	/	/	/	/ (advisory board)	-	9
	State/ Regional Planning Authorities	-	-	-	-	-	-	-	-	/	-	-	1
	Power	/	/	/	/	-	-	/	/	/	/	-	8
	Function (Commissioner/Minister/Director/ State Authority)	/	/	-	-	-	/	/	/	/	/	-	7
4.	Establishment of a Register (Heritage)	/	-	/ (scheduled)	/ (scheduled)	/	/ (listed)	/	-	-	-	-	6
5.	Proposals and Programme for Preservation and Conservation	/	-	-	-	-	-	-	-	-	-	-	1
6.	Restriction of Planning Permission	/	-	-	-	/	/	/	-	-	-	-	4
7.	Care / Repair of Cultural Heritage	/		/	/	/	/	/	-	-	-	/	7
8.	Establishment of Fund	/	/	-	-	-	-	/	-	-	-	-	3
	Financial Incentives	/	-	-	-	/	-	/	-	-	-	-	3
	Tax Relief	/	-	-	-	-	-	-	-	-	-	-	1
	General Fund	-	-	-	-	-	-	-	/	-	-	-	1
9.	Enforcement	-	-	-	-	/	-	/	-	-	-	-	2
	Penalty	/	/	/	/	/	-	/	/	/	-	-	8
10.	Tree Preservation Order	-	-	-	-	-	-	-	-	/	/	-	2
11.	Traditional Arts and Handicraft	-	-	-	/	-	-	-	-	-	-	-	1
12.	Others: Application of NHA 2005	-	-	-	-	/	-	-	-	-	-	-	1



The global picture in Table 7.2 shows different formats from one state to another, but they also share some similar elements. Only those significant to the research are mentioned here. Some elements applied only to certain states and not to the rest. The most obvious common element is **Interpretation**: all definitions were interpreted in a different way from one Act to another (Table 7.3).

Table 7.3: Variations in interpretation (definition) of the same terminology.

Interpretation		
Term	Definition	Act / Enactment
“building”	“means a building or groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science;”	National Heritage Act 2005 (Act 645), <i>pg. 95</i> State of Penang Heritage Bill 2011 ( <i>Warisan Kerajaan Negeri Pulau Pinang 2011</i> ), <i>pg. 49</i>
	“means any building, structure or work (whether above or below the surface of the land or water), monument, commemorative statute or memorial;”	Sarawak Cultural Heritage Ordinance 1993, <i>pg. 4</i>
“conservation”	“includes preservation, restoration, reconstruction, rehabilitation and adaptation or any combination;”	National Heritage Act 2005 (Act 645), <i>pg. 99</i>
	“means the process of looking after a cultural heritage or a conservation area so as to retain its significance, and includes maintenance, preservation, restoration, reconstruction, adaptation or a combination of two or more of these;”	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988, <i>pg. 15 and 16</i>
	“includes preservation, restoration, reconstruction, rehabilitation and adaptation or any of its combination;”	State of Penang Heritage Bill 2011 ( <i>Warisan Kerajaan Negeri Pulau Pinang 2011</i> ), <i>pg. 51</i>
“cultural heritage”	“includes tangible or intangible form of cultural property, structure or artefact and may include a heritage matter, object, item, artefact, formation structure, performance, dance, song, music that is pertinent to the historical or contemporary way of life of Malaysians, on or in land or underwater cultural heritage of tangible form but excluding natural heritage;”	National Heritage Act 2005 (Act 645), <i>pg. 100</i>
	“includes tangible or intangible form of cultural property, structure or artefact, and may include a heritage matter, object, item, artefact, formation structure, performance, dance, song, music which has aesthetic, archaeological, architectural, cultural, historical, scientific, social, spiritual, linguistic or technological value pertinent to the historical or contemporary way of life of the community of Penang, on or in land excluding natural heritage;”	State of Penang Heritage Bill 2011 ( <i>Warisan Kerajaan Negeri Pulau Pinang 2011</i> ), <i>pg. 52</i>
	“includes antiquity, historical object, historical site, site, fabric, building, structure, ethnographic matter, works of art, manuscript, coins, currency notes, medals, badges, scientific crest, flag, armour, vehicle, ship and trees which has a significant and special architectural aesthetic, historical, cultural, scientific, economic and any other interest or value;”	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988, <i>pg. 16</i>

Most of the pieces of legislation share at least one element, that of **Administration**, which outlines how the Act is controlled by the Committee and their power and function. Only **N1** and **L5** had established their own Heritage Council while others have only a Commissioner, Minister, Director or State Authority who have this specific role and responsibility.

**Register** is also one of the important common elements, as seen in **N1, L1, L3, L4, L5** and **L6**. All of the historic environments (both tangible and intangible) should be registered in a proper documentation to improve control and provide a means for monitoring their preservation. Not everyone however has a form of **enforcement**, except for **N1** and **L5**, but all do include a penalty. The penalty charged also varies by state, depending on the offence (Table 7.4).

Table 7.4: The differences in penalty charges

<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>	<b>L5</b>	<b>N1</b>	<b>N2</b>	<b>N3</b>
MYR 10,000	MYR 10,000	MYR 500 - 2,000	MYR 1,000 -20,000	MYR 50,000	MYR 50,000	MYR 2,000	MYR 1,000

The register also relates to the **Care and Repair of Cultural Heritage**. If the cultural heritage is registered, then all the repair works will be easier to monitor. The care will guide what is the best way to deal with the historic environment and mainly minimise disturbance to the fabric. For example, part of **L1** stated in Section 12 (1),

‘Whenever a building, declared to be subject to preservation or conservation is in need of urgent work or repair to be carried out necessary for the purpose thereof, whether occupied or otherwise, the Museum Corporation may make arrangements with the owner or the occupier as the case may be, for the work or the repair to be executed, and for such purposes may contribute towards the cost thereof.’

*(Melaka Preservation and Conservation of Cultural Heritage Enactment 1988, pg. 22)*

The proper care for designated buildings can be found in **N5** and **L6**, and it includes more practical and very technical guidelines. This level of care should come together with the fund or with financial assistance. Not all legislations have funds or

incentives except for **N1**, **L1** and **L5**. For **L1**, they have already implemented it and it has been a success (interview with **E16**, November 2013). Under **L1**, a Preservation and Conservation Fund was established by the State Government under Section 14 (1), (2), (3), (4) to help private owners maintain and conserve their heritage buildings. As also mentioned by **E16**, funding comes not only from the State and Federal government allocation but also through donations from statutory bodies, private organisations and individuals. With the existence of this funding, the owners of gazetted cultural heritage may apply for financial assistance to help them with its maintenance. Only **L1**, Section 16, mentions tax relief that allows the owner to claim back from the entrance charges (visitor donation) they make to their property. The collection from donation usually used for the house maintenance. This is a good approach to apply to the framework of the Negeri Sembilan conservation principles framework.

When dealing with conservation work, with regard to listed buildings, it also involves a **Restriction of Planning Permission**. The restriction was mentioned in the guidance to any new development in that area, helping to minimise the impact on the original fabric of the property. Although this became one of the challenges to any new development, it balances human needs and the historical environmental aspect.

There is no specific section on building preservation in **N3** and **N4** but there is a section on a Tree Preservation Order, which is usually applied to the town area. **L4** is the only enactment that has a specific Part of Traditional Arts and Handicraft. It makes this enactment unique by highlighting how to promote, stimulate interest and rehabilitate traditional manual skills, preserve them, provide incentives and establish a centre for exhibitions and a workshop. This demonstrates the local significance of traditional skills. Only **L5** has incorporated in their legislation the application of **N1** as it was introduced in 2011. Most of the content is actually quite similar to **N1**. It constitutes a way forward to developing local heritage legislation in line with national legislation.

**N5** is the sole guideline at national level that focuses on the practicality of the implementation process of conservation works, particularly for buildings constructed

from brick, cement or concrete materials. The technical guidance was quite well developed. Still, none of the guidelines or legislations outlined in Tables 6.2 and 6.5 contain specific sections focusing particularly on the traditional Malay house.

Although **N1** is the main heritage legislation in Malaysia, **L1** and **L5** could be the most significant ones to refer to in terms of developing a further legislation framework or conservation principles for NSTMHs. This is because it is suited to the local context. Table 7.5 shows the findings of analysis which highlight the overall interpretation of the important statement in all pieces of legislation and their findings (local and national).

Table 7.5: The findings of analysis for local and national document reviews.

	LOCAL (STATE LEVEL)					NATIONAL (FEDERAL LEVEL)					
	ENACTMENT					ACT					GUIDELINE
	L1	L2	L3	L4	L5	L6	N1	N2	N3	N4	N5
Overall interpretation according to its content particularly on cultural heritage in general.	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988	Johore Enactment 1988.	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977), amendment No.2 of 2006	Sarawak Cultural Heritage Ordinance 1993.	Penang State Heritage Enactment 2011. Regulations Cultural Heritage and Natural Heritage Penang ( <i>Enakmen Warisan Negeri Pulau Pinang</i> 2011).	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	National Heritage Act 2005 (Act 645)	Local Government Act 1976 (Act 171)	Town and Country Planning 1976 (Act 172)	Federal Territory Act 1982 (Act 267) for Kuala Lumpur, Labuan and Putrajaya.	<i>Garis panduan Pemeliharaan Bangunan Warisan 2012</i> (Guideline in the Conservation of Heritage Buildings) 2012
	This enactment is the provisions for the preservation, conservation and enhancement of cultural heritage of the Malacca State.	Specific for the cultural and historical heritage of the Johore State.	Covers preservation and historical monuments, archaeological sites, antiquities, regulate matters connected with research, law relating to treasure trove in Sabah.	Preservation of antiquities, archaeological, architectural, religious, artistic or traditional interest, and value for the benefit of the State and as a heritage of the people.	Management, preservation and conservation of cultural heritage for the State of Penang.	This guideline is specific on certain conservation areas in George town area. It is more planning system and application more specific to the certain type of building such as shop house.	The main national heritage legislation, it covers most aspects, from interpretation, administration to the establishment of council and committee, fund, register, declaration and etc., tangible and intangible, underwater cultural heritage, or treasure trove.	More relevant to the workings of local government.	This Act related to the regulation of town and country planning.	This Act related to the regulation in the Federal Territory.	A guide for the implementation of heritage building conservation work in Malaysia.
	Aimed more towards the protection of privately owned buildings and monuments over which the Government has no jurisdiction.	Little interpretation and more focus on the <i>Yayasan's</i> power and function, fund, penalty and estimated expenses.	It also covers register, care of historical monuments and sites, as well as penalty charge.	It covers register, care of historical monuments and sites as well as penalty charge. It also highlighted the traditional arts and handicraft as one of the cultural heritage under specific section that need to be preserved.	This enactment is the only one has a section on the application of NHA as it was billed in 2011.	It has very detail explanation in term of conservation principles, listed building and control system.		Only Part XII Section 101, about maintenance (conversion) of historical buildings in town area.	Section 12 (viii) the preservation and enhancement of character and appearance of buildings	Section 20 (2) (a) (i), (ii), (iii) stated about no planning permission be necessary for maintenance which affect interior only (not involve any alteration, conversion, change of use and material use that affect external).	It is very detail explanation that covers: Part II (2.0) Principles and conservation process
	Comprises of administration, register, restriction on planning permission, repairs, fund, financial incentive, tax relief and conservation and preservation proposal and programme and etc.	No section specific on enforcement.			The content of this legislation is quite similar to NHA but suited to the local context.				Section 19 (2) (a) (i), (ii), (iii): no planning permission: maintenance (alteration, conversion, material use) which affect interior only. Not involve external.		Part III (3.0) Documentation Guideline Part VI (4.0) Conservation Guidelines and Principles on architectural elements.
	No section specific on enforcement but there is penalty charge.				Besides having a register, financing and care of heritage site, they also have own Heritage Council and a form of Enforcement.				Section 22 (i), (j), (k): compatibility to the existing architecture or historical interest, any addition or alteration, re-erection/demolition should be retained the façade and external character.		
Key Observations	* The most comprehensive act with financial incentive, tax relief, and conservation and preservation proposal and programme *Interpretation *Register *Care *Conservation Program *Fund *Administration *Restriction Planning	*Power and Function of the <i>Yayasan</i> is strong includes stimulate public interest, support, disseminate knowledge, appropriate documentation records, reference centre for research work. *Interpretation *Interpretation *Care *Administration	*More to antiquity and treasure trove, similar to B4. *Interpretation *Register *Care *Administration	*The only specific Section on Traditional Arts and Handicraft is unique as it promote, stimulate interest and rehabilitate traditional manual skills, while preserve it, with incentives and establish centre for exhibition and workshop. *Interpretation *Register *Care *Administration	*Quite new and relevant to A1 but specific to local context. *Interpretation *Register *Care *Fund *Administration *Restriction Planning	*More specific to conservation area particularly shop houses. Very detail conservation principles and control system. *Interpretation *Register *Care *Administration *Restriction Planning	*Too general *None of the section stated about the Traditional Malay house in particular *Interpretation *Register *Care *Fund *Administration *Restriction Planning	*Villages are also subject to get permission from Local Authority (LA) or Local Planning Authority (LPA) Unbalanced enforcement to this area by the LA or LPA *Interpretation *Administration	*Highlighted in draft local plan and treatment of applications *Interpretation *Administration	* Similar to A3 but highlighted in planning control *Interpretation *Administration	
Findings	•	• Interpretation • Register • Proposal/program for Conservation		• Care • Fund and Incentive • Restriction of Planning Submission	*None of the legislation above (L1, L2, L3, L4, L5, L6, N1, N2, N3, N4, N5,) stated about protecting or conserving the Traditional Malay house in particular						

The spirit of these documents was relevant to the theoretical principles, protection and implementation and practical ways that will be set up later in this work with regard to the TMH. Although some were gazetted purposely for protecting a specific historic environment, none of them specifically identify the TMH as an important heritage to be protected. The importance of the TMH has been discussed in Chapter 2.

**N1** can be considered ‘the mother of heritage legislation’ in Malaysia, but it is too general, as was also mentioned in the interviews with the experts in Chapter 5. As a main tool in protecting the historic environment in Malaysia, it should act as a ‘huge umbrella’ to protect one of the important elements of heritage in Malaysia – the TMH. There are various types of TMH in Malaysia, but none are protected in **N1**. In contrast, **L4** addresses the importance of traditional arts and handicraft as part of the tangible heritage that needs to be protected. Even the full explanation of the practical and technical advice on conservation principles guidance in **N5** still does not include TMH. This makes it difficult for people to protect their traditional houses if there is still no reference, guidance or even national and local legislation to consider them as important heritage.

Even when most of the statements (Table 7.5) mentioned historical interest, appearance, character, alteration and maintenance, this affected only building facades located in town areas (**N2**, **N3**, **N4**). The only example apart from **N5** is **L6**, a very specific document focusing on protecting and preserving shophouses in a conservation area. However, these Acts are better than nothing. Many challenges have been identified in Chapter 5 and Chapter 6, but it is important to ensure that all the changes and challenges can be controlled in a proper way, at the very least to minimise the impact on the houses’ original fabric, form and function in their original setting and context. Any building, however, including the NSTMH, are possible to be gazetted as they are part of Malaysia’s historical landscape and still have important roles to play representing the Malays in *kampung* areas. There is a need to have something that can be used to hold on to and protect them before they are gone forever.

### 7.2.3 International Context -Charters and Principles

International documents were also reviewed to determine whether they relate only to international heritage. Or do they contain guiding principles for every type of heritage? There are some elements that apply only to a World Heritage site, and there are some that are specific to timber or vernacular architecture. These are the things that people often used as a reference point even at national level. They do not have a legal value, but they do provide guidance of best practice.

So, nowadays, they are a substitute for theories. There are many conservation theories and these mostly interact and communicate with good conservation practice through charters. In a way, they capture good international practice that is common and which is also subscribed to by all nations. It is food for thought in a structured way looking at a specific problem like timber or vernacular. For example, the Charter on Built Vernacular Heritage (**II**) promoted by the International Committee of Vernacular Architecture (CIAV) explains the importance of vernacular heritage expressed by the culture of a community and the ways in which they continuously adapt and respond to the environment.

By using the same analysis method, it is hoped that the findings will help to distinguish between what can be applied to monuments of international importance and operative principles in a national and local context. The proposed principles of this research is parallel to the World Heritage Convention, in which Malaysia is a part of since 1988 thus inspiring conservation practices in the country.

All eight documents were reviewed as in Table 7.6, including **I8**, which has a closed context and is also a national document in Scotland. In the context of the author's origin (Malaysia) the document is perceived as an international document.

Table 7.6: List of Documents for International Charters and Principles

<b>C</b>	<b>International Context - Relevant Charters and Principles (UNESCO / ICOMOS)</b>	<b>Code</b>
1.	Charter on the Built Vernacular Heritage (1999)	<b>I1</b>
2.	The Principles for the Preservation of Historic Timber Structure (1999), or the ICOMOS International Wood Charter	<b>I2</b>
3.	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	<b>I3</b>
4.	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	<b>I4</b>
5.	ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	<b>I5</b>
6.	Guideline on Education and Training in the Conservation of Monuments, Ensembles and Sites (1993)	<b>I6</b>
7.	ICOMOS Charter: Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage (2003)	<b>I7</b>
8.	Scottish Historic Environment Policy (2011)	<b>I8</b>

#### 7.2.4 Analysis of Findings

Similar to the local documents in Table 7.5, the analysis of findings of international documents (**I1, I2, I3, I4, I5, I6, I7, I8**) showed an overall interpretation, analysis of findings of the important elements and statement, as shown in Table 7.7.



Table 7.7: The findings of analysis for international document reviews.

INTERNATIONAL - RELEVANT CHARTERS AND PRINCIPLES								
	I1	I2	I3	I4	I5	I6	I7	I8
	Charter on the Built Vernacular Heritage (1999)	The Principles for the Preservation of Historic Timber Structures (1999)	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	Guideline on Education and Training in the Conservation of Monuments, Ensembles and Sites (1993)	ICOMOS Charter Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage (2003)	Scottish Historic Environment Policy (SHEP) (2011)
Overall interpretation of the documents	<p>The only one document that addresses vernacular heritage versus globalization (cultural, economic and architectural homogenization) which have made it extremely vulnerable.</p> <p>It sets several important guidelines for conservation practice such as research and documentation, traditional building skills, conversion as well as the need for training education for professionals and communities.</p>	<p>This document is relevant to any type of timber building, with a cultural significance. This Charter contains basic and universally applicable principles and practices.</p> <p>Recommends comprehensive &amp; thorough inspection, recording and documentation, monitoring and maintenance, interventions, repair and replacement, management of historic forest reserves, contemporary materials and technologies and, also education and training.</p> <p>The only international guidance that specifically focuses on the conservation of historic timber buildings (Worthing and Dann, 2000).</p>	<p>Guides the conservation and management of places of cultural significance (cultural heritage places)</p> <p>More specific standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers and custodians.</p> <p>The Charter can be applied to all types of places of cultural significance including natural, <b>indigenous</b> and historic places with cultural values.</p> <p>The key concepts are included in the Conservation Principles, Conservation Processes and Conservation Practice sections.</p> <p>Explanatory Notes also form part of the Charter.</p>	<p>This charter addresses conservation practice and approach relating to architecture and sites, in philosophical terms. It also stresses the development of a critical approach especially <b>conservation and restoration</b> that based on the principles of authenticity, maintaining physical and historical context from different periods.</p> <p>The Venice Charter stresses the importance of <b>setting, respect for original fabric, precise documentation</b> of any intervention, the significance of contributions from all periods to the building's character, and the maintenance of historic buildings.</p>	<p>This document is to set out the principal reasons, responsibilities, planning measures, contents, management and sharing considerations for the recording of the cultural heritage.</p>	<p>To promote the establishment of standards and guidelines for education and training in the conservation of monuments, groups of buildings and sites.</p>	<p>A basic guide to conservation and restoration work within a multi-disciplinary framework. It describes the importance of maintaining the integrity of components, the specific use and limitation of building technology. It emphasizes the <b>safety</b> aspect as a main priority.</p>	<p>Sets out Scottish Ministers' policies for the historic environment, direction for Historic Scotland and provides a framework (the day-to-day work) of a range of organisations that have a role and interest in managing the historic environment.</p> <p>The SHEP is a relevant document in the statutory planning, Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) processes.</p>
Key Observations	<p>It is crucial to recognise the changes in all phases of its development but not all are worthy to conserve.</p> <p>Item 6: "Changes over time should be appreciated and understood as important aspects of vernacular architecture" pg. 28.</p> <p>Unless changes are not harmonious with the existing character, compromising its original features).</p> <p>Item 6: "Conformity of all parts of building to a single period, will not normally be the goal of work on</p>	<p><b>The importance and great diversity of species and qualities used of timber structures</b> to build them.</p> <p><b>The high vulnerability of structures</b> (decay, degradation caused by humidity, light, fungal and insect attacks, fire, as well as wear and tear.</p> <p>The increasing scarcity due to <b>vulnerability, misuse, the loss of skills and knowledge</b></p>	<p><b>Conservation and management</b></p> <p>To retain the <i>cultural significance</i> of a <i>place</i> and safeguarded from vulnerable state.</p> <p><b>Cautious approach</b></p> <p>Respect the existing <i>fabric, use, associations</i> and <i>meanings</i> as much as possible.</p> <p>Any changes to a <i>place</i> well integrated with the physical evidence and not distorted.</p> <p><b>Knowledge, skills and techniques</b></p> <p>Should make use of all the knowledge and skills which contribute to care of the <i>place</i>.</p> <p>For a significant fabric, the conservation with traditional techniques and materials are preferable.</p> <p><b>Use</b></p> <p>The <i>use</i> of a <i>place</i> should be retained if it is of <i>cultural significance</i>.</p>	<p>Basic principles should be laid down on an international basis, and it has to suit each country's framework of its own culture and traditions.</p> <p><b>Publication</b></p> <p>There should always be precise documentation (analytical and critical reports, drawing illustrations and photographs). The record should be placed in the archives of a public institution and made available to any researcher. The report is recommended to be published.</p>	<p><b>The Reasons for Recording</b></p> <p><b>Responsibility for Recording</b></p> <p><b>Planning for Recording</b></p> <p><b>Management, Dissemination and Sharing of Records</b></p>	<p>Need to <b>develop holistic approach</b></p> <p>Should be <b>flexible</b> enough to suit the community's needs and understanding.</p> <p>A need to <b>deliver knowledge of conservation attitudes and approaches to related persons who may have a direct or indirect impact on cultural property</b>. (Eg. methods of mitigating damage and improving fire prevention). The <b>skilled person</b> (craftsmen) should be <b>further trained for</b></p>	<p>Value and authenticity of architectural heritage <b>cannot be based on fixed criteria</b>. The physical heritage must be considered within the cultural context to which it belongs.</p> <p>The value and integrity of architectural heritage as a <b>unique product of the specific building technology of its time</b> avoid focusing on its appearance only.</p> <p>A <b>full understanding of the structural and material characteristics (its original construction techniques, alteration</b></p>	<p>Secure a monument or site's conservation and management for the benefit of present and future generations that should be able to understand, enjoy, appreciate and learn from, through access, research, knowledge, information and education.</p> <p>Preservation of individual historic assets, none should be lost or radically changed without adequate consideration of its significance.</p> <p>Managed in a sustainable way (social, cultural, economic and environmental resource of great value)</p>

Table 7.7: Cont.

vernacular architecture” pg.28. (Depends on the aims of the project. To retain the original design sometime is impossible and historical documentation is scarcely available.)	<b>of traditional design and construction technology due to modernization.</b>  The historic structure and function should be considered as a whole (intervention) and/or reveal its cultural values (restoration).	<b>Setting</b> <i>Setting</i> includes visual, sensory, spiritual and cultural relationships that contribute to the <i>cultural significance</i> of the place. It should be considered appropriately.  <b>Location</b> The physical location of building should remain within its historical context. Relocation is unacceptable unless for ensuring its survival. Some buildings <b>were designed to be readily removable especially the TMH</b> or already <b>have a history of relocation</b> . Removal may be acceptable if no significant links with their present location involved although very rare. If any building is moved, it should be given an appropriate location and <i>use</i> .  <b>Contents</b> Contents or loose architectural elements on site should be retained at that place. Their relocation is unacceptable unless for security, <i>preservation</i> <b>health and safety or ensuring its survival</b> .  <b>Participation</b> Participation should involve people for whom the place has significant <i>associations</i> and <i>meanings</i> .  <b>Change</b> Change may be necessary but is undesirable where it reduces cultural significance. It should be guided by its <i>interpretation</i> . When change is being considered, a range of options should be explored to seek the best one in minimising the intervention. Changes if possible should be reversible. Major demolition is not acceptable.  <b>Maintenance</b> Maintenance is necessary to retain that <i>cultural significance</i> especially in fulfilling traditional customs in some communities.  <b>New work</b> Additions or subtractions may be acceptable if they consider the original form, scale, colour, architecture, material and respect the <i>cultural significance</i> of the site. <i>New work</i> should have minimal impact and avoid imitation.  <b>Retaining or reintroducing use</b> Retaining, modifying or reintroducing <i>use</i> may involve substantial new work and must be done through appropriate forms of <i>conservation</i> .  <b>Retaining associations and meanings</b> People and place are significantly associated to each other and should be respected.  <b>Managing Change</b> Any proposed changes should be managed by a statement and policy of significance especially regarding their impact. Any changes should be recorded (before and after).	<b>conservation work (historic craft, details and practices, recording and documentation),.</b>  Organization of education and training should: a. <b>Begin as earlier as possible in schools,</b> and universities as they have an important role: • <b>raise visual and cultural awareness</b> • <b>improve ability to read and understand</b> the elements of cultural heritage • <b>give the cultural preparation needed (specialist education and training)</b> combined with practical hands-on training work b. <b>The exchange of ideas between national and international institutes</b> (collaboration), including exchange of experts and students. c. Continuing Professional Development (CPD) The long term and part time courses that can enlarge attitudes and understanding of conservation at least by introducing the concepts and conservation techniques. Practical experience of specialist courses is also recommended.  Possible remedial measures and controls: -Address root causes rather than symptoms. -Preventive maintenance -Proportion safety and durability with the least harm to heritage values. -The choice between “traditional” and “innovative” techniques depends on cases. Least invasive and most compatible with heritage values are preferable. -“Reversible” approach when new knowledge is acquired. -The characteristics of new materials used and their compatibility with existing materials should be fully established with long-term impacts consideration. -Respect the concept, techniques and historical value of the original structure and leave evidence that can be recognised in the future. -Integrated plan of architecture, structure, service installations and functionality. -The removal or alteration of any historic material or distinctive architectural features should be avoided whenever possible. -Repair rather than replacement for deteriorated structures. -Alterations (part of the history of the structure) should be maintained but must not compromise the safety requirements. -Dismantling and reassembly (an optional measure) when conservation by other means is impossible, or harmful. -Checking and monitoring activities should be documented and kept as part of the history of the structure.	<b>effects) is important</b> before making any decision including the causes of damage, decay and safety level of the structure.  Properly recorded (before, during and after work) and all records are retained in readily accessible archives.  Use appropriate technical knowledge, materials, skills and methods of working.  Reversible approach where change is proposed with careful consideration, authoritatively based, properly planned and executed.  Monitoring by routine maintenance and good housekeeping.  The relevant bodies should ensure: -appropriate and effective systems for monitoring and recording should be established. -suitable knowledge, skills, materials and technologies to enable conservation action to be carried out. -support, advice, encouragement, and comprehensive guidance must be readily available to all whose activities have an impact upon the repair, maintenance, management, protection and conservation.  Care, repair and maintenance support the survival and expansion of traditional skills.  ‘Historic’ environment should have major links to policy on architecture, land management, planning and building standards.  Maintaining quality: -any proposed alteration or change of use, should be appropriate and follow best conservation practice - retain historic character by using appropriate and compatible materials and construction techniques -new developments should be sensitive to historic character by attaining high standards in design and construction.  Ensure that existing, intended management or use is appropriate and should be based on best available knowledge.  Use appropriate assessment methodologies of any proposed management, use or development.
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Table 7.7: Cont

	<p><b>Disturbance of fabric</b> Disturbance of significant <i>fabric</i> should be minimised</p> <p><b>Direction, supervision and implementation</b> Competent supervision of interventions should be in place at all stages. Only people with appropriate knowledge and skills should deal with any changes made to the original fabric.</p> <p><b>Records</b> The records associated with the <i>conservation</i> of a site should be kept in a permanent archive and made publicly available, except for security and privacy reasons.</p> <p><b>Removed fabric</b> Significant <i>fabric</i> which has been removed from a place should be catalogued, and kept at the place.</p>	<p>Where change is to proceed, adopt strategies to mitigate its impact with minimum interventions</p>						
Key Observations	<p>*Research and Documentation</p> <p>*Training</p> <p>*Traditional Building System</p> <p>*Replacement of Materials and parts</p> <p>*Changes and period restoration</p>	<p>*Inspection, Recording and Documentation</p> <p>*Monitoring and Maintenance</p> <p>*Repair and Replacement</p> <p>*Education and Training</p>	<p><b>*Definitions</b></p> <p><b>*Location</b></p> <p><b>*Knowledge, skills and technique</b></p> <p><b>*New Work</b></p> <p><b>*Managing Changes</b></p> <p><b>*Maintenance</b></p> <p><b>*Participation</b></p> <p><b>*Value</b></p> <ul style="list-style-type: none"><li>Understand the place and its cultural significance, including its meaning to people, before making decisions about its future;</li><li>Involve the communities associated with the place;</li><li>Care for the culturally significant fabric and other significant attributes, taking account of all aspects of significance;</li><li>Care for the place's setting;</li><li>Provide an appropriate use;</li><li>Provide security for the place;</li><li>Use available expertise;</li><li>Make records of the place and changes to it, and the reasons for decisions and actions; and</li><li>Interpret and present the place in a manner appropriate for its significance.</li></ul>	<p>*Basic principles maybe not necessary laid down on an international basis for local heritage as the vernacular TMH</p> <p><b>*Definitions</b></p> <p>*Publication</p> <p><b>*Replacement</b></p>	<p>*To have a proper recording management.</p> <p><b>*Definitions</b></p> <p><b>*The Reasons, Responsibility and Planning</b></p> <p>-Should be seen as a <b>priority</b> (national, regional, local inventory)</p> <p><b>*Management, Dissemination and Sharing</b></p> <p>-Records <b>should be accessible</b> to the statutory authorities, related professionals and to the public (research, development controls, legal processes purposes)</p> <p>-<b>Up-date records</b> (readily available)</p> <p>-<b>The location of the records should be made public.</b></p>	<p><b>*Educational and Training Programs and Courses</b></p>	<p>*Remedial Measures and Controls</p> <p><b>*Values</b></p>	<p><b>*Definitions</b></p> <p><b>*Protection and Management of the Historic Environment</b></p> <p><b>*Responsibilities of Government Departments</b></p> <p><b>*Technical, Professional and Academic Knowledge</b></p> <p><b>*Access and Educational Initiatives</b></p> <p><b>*Skills and Materials</b></p>
Findings	<p>1. Education, Training and Awareness</p> <p>2. Recording and Documentation</p> <p>3. Location</p> <p>4. Knowledge, traditional skills and technique</p> <p>5. New Work and Intervention</p>		<p>6. Managing Changes</p> <p>7. Monitoring and Maintenance</p> <p>8. Involvement (Participation)</p> <p>9. Traditional Building System</p>		<p>10. Replacement</p> <p>11. The Concept of Place</p> <p>12. Values</p>			
	<p>All these documents provide guiding principles towards an appropriate response to particular conservation issues; -comprehensive analysis of the place, minimum intervention in the historic fabric, precise documentation, respect for contributions from all periods, maintenance of authenticity In order to get a holistic view of the historic environment.</p>							

As the proposed framework may incorporate both a micro and macro understanding of the overall issues in the conservation of the NSTMH, all of the documents shown in Table 7.7 were reviewed. Certain elements highlighted that were suited to the needs of the research, from the aspect of the importance of setting, respect to the original fabric and the precise documentation required for a particular issue.

Although each of the documents has its speciality, **I1** and **I2** were more closely related to this research as they shared a similar characteristic of being under the ‘one’ umbrella of vernacular. As timber is also prone to decay, its characteristics and vulnerability should be considered and understood before deciding on any replacement or intervention, as outlined in **I2**.

Every element highlighted by the documents, as in Table 7.7, shows the unique characteristics that cover areas such as education, training and awareness that also form part of the research findings that were pointed out from **I6**. Besides that, **I3** was used as a very significant document to develop a basic framework that was carefully laid out from one section to another. Another element that was highlighted in **I3**, as well as in **I8**, is managing change and this was quite a useful contemporary element. Other than that, the safety aspect, as mentioned in **I7**, was highlighted, especially as it required a full understanding of structural techniques and applications. Besides that, traditional skills, knowledge and technique in the traditional building should also be recorded and managed in a sustainable way with proper dissemination and sharing, as highlighted in **I5**, **I6** and **I8**. Also, a reversible approach with special care and repair should be well monitored, especially in regard to any changes and alterations to the original form, fabric and function, as mentioned in **I6** and **I8**.

With all the consideration of the important elements in the documents, the protection of built heritage environments should be well managed with full responsibilities taken by the related body, agencies or individuals. Moreover, these international documents were reviewed and provide guiding principles towards an appropriate response to particular conservation issues. It covers a great comprehensive analysis of place and setting, minimum intervention in the historic fabric, precise documentation and respect for contribution from all periods and maintenance aspect

of authenticity in order to get a holistic approach and view of the historic environment. The Burra Charter (2013) was seen to be a suitable reference to follow as a fundamental framework for the proposal. The summaries of analysis based on Table 7.7 about the elements are shown in Table 7.8.

Table 7.8: The summaries of analysis for international documents

	INTERNATIONAL CONTEXT - RELEVANT CHARTERS AND PRINCIPLES							
	I1	I2	I3	I4	I5	I6	I7	I8
	Charter on the Built Vernacular Heritage (1999)	The Principles for the Presentation of Historic Towns and Structures (1999)	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	ICOMOS Principles for the Recording of Monuments, Groups of Buildings and Sites (1996)	Guideline on Education and Training in the Conservation of Monuments, Ensembles and Sites (1993)	ICOMOS Charter Principles for the Analysis, Conservation and Restoration of Architectural Heritage (2003)	Scottish Historic Environment Policy (GHEP) (2011)
Elements	Documentation and dissemination	/	/	/	/	-	-	5
	Training	/	/	-	-	/	-	3
	Traditional Building System	/	-	-	-	-	-	1
	Replacement	/	/	-	/	-	-	3
	Change	/	-	/	-	-	-	3
	Monitoring and Maintenance	-	/	/	/	-	/	5
	Education	/	/	-	-	/	-	4
	Definitions	-	-	/	/	-	-	4
	Location	-	-	/	-	-	-	1
	Knowledge, Skill & Technique	/	/	/	-	/	/	6
	New work	-	/	/	-	-	-	2
	Managing Change	-	-	/	-	-	-	2
	Participation	-	-	/	-	-	-	1
	Value	-	-	/	-	-	/	2
	Responsibility and planning	-	-	/	-	/	-	3
	Protection and Management	-	-	/	-	/	/	4
	Understanding and awareness	/	/	/	-	/	/	6

Figures 7.2 and 7.3 are the initial templates that were derived from all the findings discussed earlier on the local and national heritage legislation (Table 7.2) as well as the international charters and principles (Table 7.8).

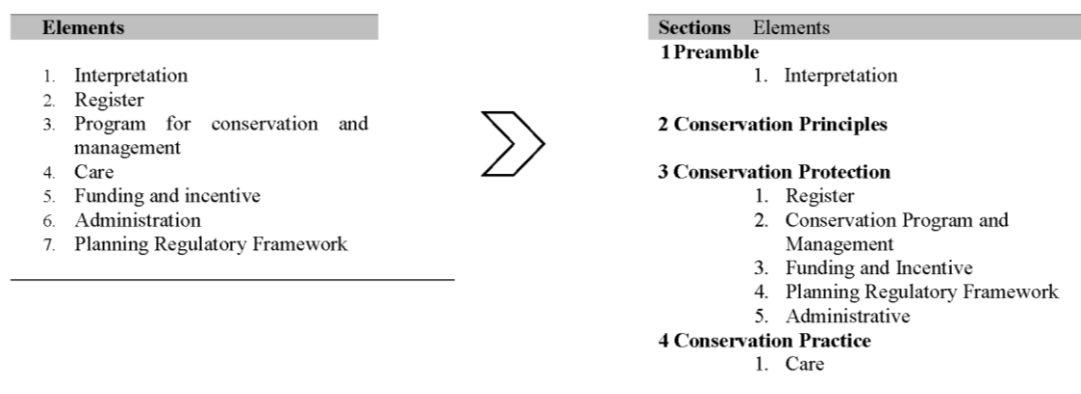


Figure 7.2: The initial and revised templates for local heritage legislation.

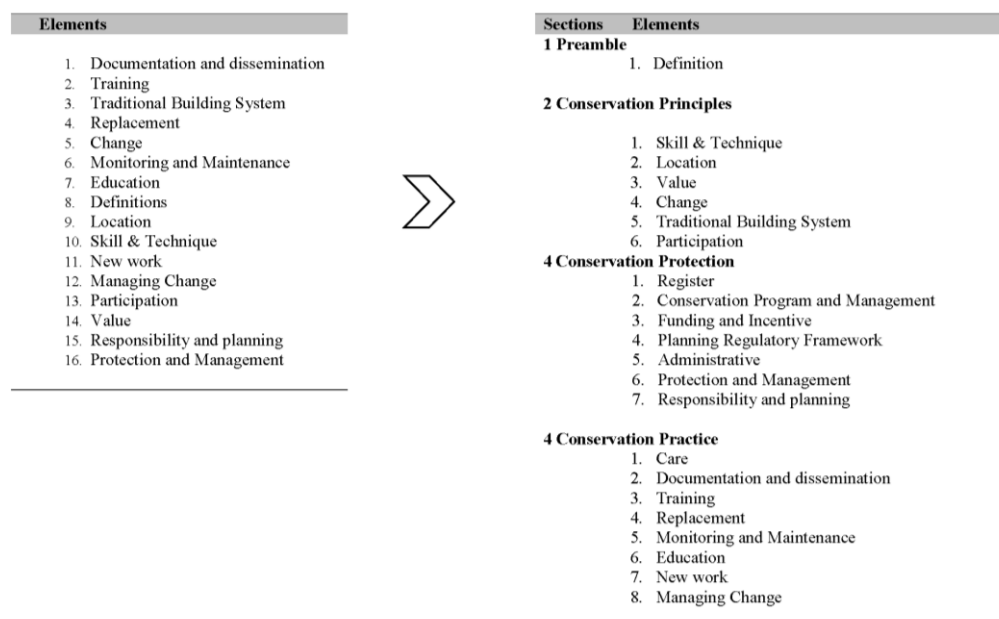


Figure 7.3: The initial and revised templates for international charters or principles.

The revised template from the document review method (Chapter 7) will then be merged with the other two findings from the interview method (Chapter 5) and observation method (Chapter 6) before being developed into the overall initial conservation principles framework for the NSTMH.

### 7.3 Chapter Summary

This chapter has presented the data collection, analysis and key findings for **RO3**, in understanding the existing conservation principles on vernacular timber structures locally and internationally. The chapter elaborates on the significance of reviewing all of those documents to identify possible elements that can be adopted and adapted to suit the Negeri Sembilan context. From the reviewing process of all the documents, none of the legislation in the national and local context were stated about protecting and conserving the NSTMH in particular, or the TMH in general. Some of the elements were identified from both local and international documents which were relevant to the need to establish a conservation framework. None of the national and local

legislation contained statements pertaining to the protection or conservation of the TMH in general or the NSTMH in particular.

As shown in Tables 7.2 and 7.5, elements for the national and local level were selected, such as interpretation, register, programme for conservation, care, fund and incentive, administration and restriction of planning submission. The same principles of analysis were followed for the international documents too (Tables 7.7 and 7.8). Several elements were identified and selected (education, training and awareness, recording and documentation, managing changes, location, knowledge, traditional skills and technique, new work and intervention, monitoring and maintenance, involvement, traditional building system and replacement).

The next chapter will discuss on the overall key findings of the three methods (interviews, observations and document reviews) towards developing an initial framework for the conservation of the NSTMH.





## **CHAPTER 8**

### **DEVELOPING A CONSERVATION PRINCIPLES FRAMEWORK FOR THE NEGERI SEMBILAN TRADITIONAL MALAY HOUSE (NSTMH-CPF)**

#### **8.1 Introduction**

This chapter contains a comprehensive discussion on the development of a conservation principle Framework (CPF) for the Negeri Sembilan Traditional Malay House (NSTMH). The chapter is structured based on the discussion of key findings; the house owners and experts' interview, on-site observations and document reviews. Their interpretation developed the INITIAL Framework for the conservation of the Negeri Sembilan Traditional Malay House (NSTMH-CPF).

#### **8.2 Discussions on Key Findings**

Overall, the three methods used (interviews, observations and document reviews) played a major contribution in the development of a CPF framework for the NSTMH. The findings were integrated into an initial 'Negeri Sembilan Traditional Malay House Conservation Principles Framework' (**NSTMH-CPF**) (Section 8.3). All of the findings were integrated on a theoretical basis towards the proposed framework that represents the cultural context, the social context in terms of the community's well-being, sense of place and the environmental benefits in several themes which reflect the whole understanding of the challenges involved in conservation of the NSTMH, and these are discussed further below.

The discussion at this stage will be laid out accordingly in four sections: House Owner Interviews, Expert Interviews, On-site Observations, and Document Reviews.

### 8.2.1 Discussion of Interviews (RO1)

Discussion of the key findings in this section focuses on the challenges in the conservation of the NSTMH from the perspective of the house owners and experts. This discussion directly answers the first research objective (RO1).

#### House Owners

Historic environments around the world are faced with many challenges, especially in terms of their ability to meet the needs of modern lifestyles. Urbanisation and rapid modernisation are driving changes that affect the social, economic and built environments (Yung et. al., 2012; Bullen & Love, 2010). Many challenges arise from the users of historic environment and, in this case, the owners of the NSTMHs themselves. Their poor understanding of heritage and lack of appreciation it is related to the way in which owners tend to ignore all of the excellent performance and indigenous construction inherent in the types of buildings from their ancestors (Lim, 1987; Yaakub, 1996). These areas have in turn become the challenges involved in protecting the NSTMHs. This is an issue that is not singular to Negeri Sembilan, but encountered worldwide. For example, according to Scottish Historic Environment Policy (2011), lack of knowledge is further compromised by a lack of traditional skills by suitably qualified craftsmen, poor repair regimes and the limited availability of local materials, especially for maintenance, factors that are also posing challenges to Scotland's historic environment.

- Understanding, appreciation, engagement, maintenance and education

Understanding is an essential step in approaching any type of conservation work for the NSTMH, as it is about identifying its values and their significance, and also the preservation of their fabric and form. This view is supported by Effendi (2014), who stated that:

Only by truly understanding the deeper meanings behind the symbols and nuances so lovingly crafted into its surface can we appreciate the house as a timeless, living home. *(cover page)*

To manage or care for the NSTMH, a basic understanding of its characteristics, its nature and how it is changing should first be determined (Chapter 2, Section 2.3). This includes:

- Main typologies of *Serambi*, *Rumah Ibu* and *Rumah Dapur*
- Raised floor
- Hierarchy of floor level
- Breathable wall and full-height window
- Steep roof and wide roof eaves
- Internal open space (multipurpose function)
- *Tanggam* system, prefabricated building and modular system
- Embellishment (colours, patterns, positions and functions)
- Natural building materials and colour
- Green compound (open landscape with fruits and coconut trees)
- *Tiang Seri*

However, in order to protect and conserve the NSTMH, the above principles are not intended to be the only focus, but should serve to highlight the importance of the *Tukang* whose traditional skills have usually been visible in every aspect of the house (Lim, 1987; Yaakub, 1996), from the day they were first built until now (Chapter 2, section 2.3.9). The challenges arising from the continuity of supporting the *Tukang*'s traditional skills and training should not be seen as a barrier to their preservation, especially for the younger generations. It is the younger generation who will ensure the survival of the NSTMH in the future.

Vellinga (2014) asserted that vernacular architecture is worthy of attention and appreciation. Having said that, it involves cultural traditions that are continuously adapted, combined, borrowed, transformed and diffused, thus highlighting the importance of making the human element more apparent within the cultural theory of the design, construction and use of vernacular architecture. The importance of appreciating the heritage cannot be ignored together with their continuous awareness and responsibilities, not only for themselves but for the house itself and its setting

within the *kampung* environment in the context of their modern society. Vellinga (2015) asserted that some of the crucial factors like ‘cost of labour, the availability of resources, the social needs and aspirations of the owners, the cultural values associated with materials and technologies, the composition of households and families, and the everyday behaviour of the inhabitants play an equally important role in determining whether a form of architecture is sustainable or not’ (p. 5).

Heritage appreciation also involves the aspect of how people’s daily lives influenced the design and layout of the house, along with its scale and proportion, and the way in which the house would represent the owner’s status, their movement, the multipurpose function of the house space during the day, etc., all of which were well incorporated into the house and are things that the young generations should be proud of and appreciate (Chapter 2, sections 2.3.3 and 2.3.4). This is supported by Rapoport (1969), who outlined five important aspects of the *genre de vie* (kind of life) which affect the built form of the house: various basic needs, family, the position of women, privacy and social intercourse. The NSTMHs were also built around the family lives of the inhabitants, which required a degree of partitioning and division into private and public spaces, as well as the segregation of men and women, because of the importance of *Serambi*, *Rumah Ibu* and *Rumah Dapur* (Lim, 1987 and Yaakub, 1996), as discussed in Chapter 2, sections 2.3 and 2.3.3, and in Figure 2.1. Furthermore, the built form of the house also represents the physical embodiment of the patterns of the owners’ behaviour and way of life (Rapoport, 1969).

The survey also revealed that the owners are the architects of their houses. This is also in line with Levi-Strauss’s concept of ‘house societies’ that highlights a particular form of social organisation of the people who live in these houses, and also of them as a group, continually being assured of their existence, identity and kinship. In the Malay society, identity and kinship are vital, as, in the *kampung* environment, they are a demonstration of people’s close and strong relationships.

It also reflects the identity of changes in term of their form, fabric and function, especially with their negative attitudes and low levels of understanding and appreciation of the house (Wan Ismail and Shamsuddin, 2005). Vellinga (2015) also

asserted that when dealing with all aspects of building tradition in vernacular architecture, the interrelation between the social, economic, political and environmental aspects plays an essential role in developing a holistic, integrated and critical approach to sustainability. Many scholars have recently been concerned with the lessons learnt from vernacular architecture, especially with regard to contemporary architecture, but a shortcoming raised by Vellinga (2015) is the ‘attention to architectural forms that commonly continues to be ignored in main architectural discourse’ (p. 4) by introducing alternative ways of doing things with regard to sustainability. Even though it is a crucial challenge in the conservation of the NSTMH, the building of understanding should be seen as a continuous process and should evolve through time. At the same time, it should also inform decision-making regarding how the house is managed.

The unique culture of the *Adat Perpatih* social system has also increasingly faded as most of the young generation are not keen on maintaining their houses. The fading sense of belonging and the memories of some of the house owners and their children is one of the reasons why abandonment has rapidly increased. In the case of *Rumah Hajah Maimunah Yaakub (HD9)*, one of their neighbours who lives in the same *kampung* and who passes by the house every day to visit his mother, stopped his bike and came to me as the house was being dismantled. The first question he asked was ‘*what is happening to this house?*’ I tried to explain that the house had been sold and was being transferred to a new site. Surprisingly, he said that, in the past, he used to play there and still remembered how the house had been happy with lots of celebrations. Even through simply being a neighbour, he gave an impression of how beautiful and important the house had been to the entire *kampung*. This raised the question of how outsiders could be more sensitive than the house owners themselves.

Another case, the owner of *Rumah Dato’ Perba Meon (HD4)*, also remembered the old scene when they used to have a guard with a traditional weapon under the archway in front of the house. This kind of memory was left with them but was no longer meaningful nowadays. Although the NSTMH was not seen as being relevant to meeting the needs of some of the owners’ current lifestyles, any efforts

made to the house should be tackled in a sustainable way so that its conservation is managed with the proper level of care.

Environmental pressures also have an impact on the social, cultural and economic changes that come in many forms, including the processes of population growth and urbanization, as well as rapid technological change. For example, houses that are deliberately manufactured to exploit their associations with tradition for political and economic purposes have lost their local, ‘original’ meaning (Vellinga, 2015, p. 122).

There may be significant differences in people’s understandings from one generation to the next. For example, modern influences may be too easily applied, such as the use of neo-classical columns (Figure 8.1). Although, stylistically, these are very characteristic of a certain style, the reality is that they are very cheap and readily available. Any contractor seeking to cut costs is likely to prefer this type of installation, which has the added attraction of being easy to install.

Not only that, understanding and appreciation of heritage buildings is subjected not only to the use of modern materials but also through the incorporation of contemporary conveniences such as electricity, refrigerators and bathrooms, etc., which are regarded as questionable, especially in regard to authenticity (Vellinga, 2015). Vellinga (2015) also asserted that this mixture of traditional and modern needs is identified as a ‘new vernacular’, or ‘post traditional’, as discussed in Chapter 2, Section 2.6.



Figure 8.1: Little awareness in incorporating modern materials (neo-classical column), which are out of context in the NSTMH.

*Source: Author (2014)*

It is important to engage with the house owner directly by making them understand what is going on. The NSTMH is a private property, and the house owner is the one who holds the entirety of responsibility for decisions about the future of their house, they therefore should play an active role. Besides this, the continuous and strong involvement of the owners is a primary principle as it recognises their indispensable bond with their houses and environment, a key aspect of vernacular architecture that is worth preserving and transmitting (Charter on the Vernacular Built Heritage, 1999).

A clear understanding of the cultural value of the NSTMH will help owners to meet their contemporary needs in ways that are acceptable. Misintepretation of the NSTMH typology might also be avoided through the development of a basic understanding of its characteristics (Masri, 2012), as discussed in Chapter 5, section 5.3.1. In knowing what is important about the NSTMH, house owners will be better positioned to protect its special character, i.e. how the traditional houses were constructed and how they perform in the particular site, as well as the maintenance aspect.

As highlighted by Hills and Worthing (2006), owners have a sense of statutory and moral duty to protect their cultural heritage, but tend not to prioritise maintenance or even to think much about it. They also seemed to have little consciousness of the ‘philosophical’ principles of conservation, the importance of retaining a building’s original fabric with preventive maintenance and minimum intervention. Hills and Worthing (2006) also stressed owners’ responsibilities and ways in which they can be motivated to avoid the discomfort of upkeep costs and also gain personal satisfaction through the maintenance of their properties, and also ways in which owners may be given fiscal incentives and practical support, similar to for example the activities of the Edinburgh World Heritage Trust in Edinburgh.

In terms of the properties shown in Figure 8.1, the cost and availability of materials influenced the house owners’ selections, such as the fact that original timber is expensive nowadays, perhaps prohibitively so. In this case, an alternative option could be made available to house owners who cannot afford to buy the expensive timber (*Chengal*). The use of a treated timber, such as treated *Kempas* (the cheapest medium heavy hardwood) might also be encouraged (Wong, 2008).

Although the preventive maintenance aspect is important to protect and conserve the house, the actual maintenance work that is then carried out mostly depends on the demand or priority given to it and also on how bad a state the house is in. Sometimes, even if they are aware of the problems, owners may simply opt to wait and let time make the decision for them. This type of scenario will encourage further deterioration to the materials, especially to the timber (Chapter 2, item 2.3). This passive attitude and lack of responsibility on the part of the owners could be tackled if the house is well maintained from an early stage, something which may help to reduce maintenance problems in the future.

Unfortunately, many house owners seem disinclined to give conservation matters the same degree of attention that they give to, for example, their smartphone or car. Houses are often left with leaks, leading to water penetration that causes timber decay, termite attack, etc. (Ridout, 2000). If a house is well kept, it can serve as an example to inspire other people.

Maintenance also related to how the house owner engaged with their house, for example, living and working in other regions. Many of the house owners do not occupy the houses as they have followed their husbands who work in different regions, as was seen in the case of the owner of *Rumah Posah Sawal (HC1)*, who indicated that she might consider returning to the house after her husband retires. The house owner lives in Seremban (a 45-minute journey), meaning the only way to look after it is to get help from her siblings, who live opposite the house. It is not a burden for them to act as caretakers as it is also their mother's house. However, the same caretaker will take care of the house as much as possible from now on.

The role of education and knowledge in heritage are important to help minimise the issue of maintenance in the long term (ICOMOS-Guideline on Education and Training in the Conservation of Monuments, Ensembles and Sites, 1993). As mentioned by Jokilehto (1995), keeping the cultural heritage in a good state of repair will help in preventing the loss of any part of the historic buildings and should continue to do so. The need for regular maintenance should be highlighted in this context.

Viewed from another perspective, the NSTMH is not only important to the house owner but also to the whole *kampung* and the whole of the Negeri Sembilan region. As part of the TMH heritage, it may even attract other people from outside the



region or country. In terms of the concept of '*seeing is believing*', the lack of good case studies or a showcase was identified as a fundamental problem. The house owner should ideally have some exposure to a good example of an approach to conservation within the *kampung*. This could be used to foster a greater understanding of what conservation is all about and to give them indirect exposure to the reality of conservation works on traditional Malay architecture.

Although there are various approaches taken by individuals, organisations and governments (national and international), as discussed in Chapter 3, section 3.3, at least one example should be located in the same *kampung* or nearby area, as most villagers would have difficulty reaching it if it was too far away, or else they would not be able to afford to visit it. This also relates to the practicality of any intention to protect the NSTMHs.

The act of building a showcase could become an indirect educational tool for house owners to learn about how to protect and deal with the changes and preservation of the house. This type of exposure would be likely to encourage them to think in a creative way and consider of the potential of heritage by presenting good examples of ideas, possibilities, challenges and opportunities. Promoting such free education at a local level may also serve to attract the attention of the young generation to witness for themselves the potential of protecting the house and at the same time enable them to appreciate the heritage, as opposed to watching it disappear.

As explained in Chapter 5, section 5.3.2, most of the houses were left unmaintained and in a poor state of repair due to the house owners' limited budgets and their need for government support. Most of the house owners highlighted aid and incentives from the government as being important, despite the fact that they themselves own the houses. Whether it is a top-down or bottom-up approach, the role of government is essential for the safeguarding of this heritage. Some of the principal characteristics of the concept of heritage, as stated in The Venice Charter (1964), highlight that government as the 'designated guardian of the public interest should be responsible for the protection and stewardship' (p. 148). The role of *Ketua Kampung* as a leader in his *kampung* area could also be enhanced as an intermediate person between government and villagers in order to fill the gap concerning the conservation

issues of the NSTMHs, especially in terms of setting a good example and developing a proper showcase.

Another example, according to PERZIM (E16) although they make requests every year for an increase to the funds allocated to the conservation of heritage buildings, these are continually rejected. Their limited funding can cover for only two TMHs each year. The funds are sponsored by local agencies at the state level, and not directly at the federal level.

### **Conservation Experts**

Due to the limitation of finding experts who were directly involved in conserving the NSTMH, views regarding heritage conservation in general in Malaysia were surveyed. The challenges arising from conservation of the TMH have not only occurred in the Negeri Sembilan region, but across the whole of Malaysia. As discussed, a lot of issues were raised by the experts regarding the real situation in the field, as outlined in Chapter 5, section 5.5. Some of the key findings from the experts' perspectives are highlighted below, and serve towards establishing the NSTMH-CPF.

- The importance of place (*sense of place*)

Most of the experts interviewed agreed that the house owners do not have strong feelings regarding their historical background, traditions and heritage other than a loose sense of belonging to their places. The loss of sense of place or '*placelessness*' has spread silently in the context of the young generation in the *kampungs* of Negeri Sembilan, as has previously been seen. Loss of the importance of place may become a dominant force towards the rise of '*placelessness*' (Relph, 1976). Relph (1976) also highlighted that the concept of 'place' is an important fundamental aspect of man's existence in the world. It also a source of identity for both individuals and groups of people, which helps to ensure that of experiencing and maintaining significant places are not lost.

Various scholars have interpreted the importance of place through its physical settings, the activities and meanings of which are reflected in human intentions and experiences (Relph, 1976), human interpretations of setting (Jorgensen and Stedman,

2001) and human emotions and relationships (Tuan, 1979). Others have suggested the overlapping of several approaches (Altman and Low, 1992). Besides, the sense of place related especially to heritage raises the house owner's sense of worth through feelings of distinctiveness and continuity of identity (Hawke, 2010). This is definitely the case if the house owners realise the importance of their house and know how it should be conserved, with an appropriate heritage knowledge in their minds that serves to inform their actions.

Turning again to Relph (1976), 'an attachment of place through its distinctive characteristics also can be reinforced by the experience of change, of the whole environment that has been claimed by feelings' (p. 142). However, any changes made should not ignore the importance of the characteristics of the NSTMH's typology; its form, fabric and function. Changes should be blended, incorporated and well integrated into the original design and conditions of the house. Hawke (2010) even suggested that the 'place can continue to support "place-referent continuity" for individuals, even when the physical heritage of the place has changed beyond recognition' (p. 38). This has been done with regard to the owners of NSTMHs, despite the fact that the original sites remain and they are beyond recognition. This is why the current modernisation that has seeped into the life of Negeri Sembilan society has led to many young people abandoning most of their ancestors' traditions. There has been a general assumption that all of the traditional form and character is not up to date and is unsuited to modern life, including the NSTMH architecture. Due to changes in lifestyle, the younger generation have a preference for modern house forms which they perceive as being better suited to today's lifestyle.

Protecting a sense of place may offer one means of encouraging house owners to appreciate the houses as this is also a planning tools including regulations on architectural styles (Williams and Stewart, 1998). Such a long-term interaction with place could be an ideal way to contribute to the creation of a sense of place (Relph, 1976), such as the beautiful layout and settings of the vernacular architecture heritage of the NSTMH in the *kampung* area. The NSTMHS's setting and layout could be 'actively and continuously constructed within house owners' individual minds, shared cultures and social practice', also involving their 'awareness of the cultural, historical and spatial context within meanings, values and social interactions are formed', as

highlighted by Williams and Stewart (1998: p. 19). It is a reflection of belief, values and feelings that individuals or groups could associate with a particular locality especially in Negeri Sembilan context.

Williams and Stewart (1998) also mentioned that ‘at local level, place meanings are less stable than they once were, being buffeted by increasingly distant and uncontrollable social and economic forces’ (p. 20). It could be agreed that this is what is happening nowadays in the *kampung* area. The NSTMH is a product that is localised to its context, and contains a responsive architecture in the beautiful setting of a *kampung*. Yet it is also influenced by the type of uncontrolled development that has reduced the value of its original setting through the effects of modernisation. This accords with Williams and Stewart (1998), who stated that ‘meanings have become more individualised and boundaries have become more permeable’ (p. 20).

At one time, a sense of a place, such as the *kampung* area, ‘may have been largely shaped and maintained by community insiders [but] is now increasingly subject to more distant market and political forces’ (Williams and Stewart, 1998, p.20). As highlighted by McCool and Martin (1994), the newcomers or in this case, the young generation (the heirs) ‘may become strongly attached to the place attachment without being socially and historically rooted in the place or community’. This is contradictory, however, to the observations made in this study of Negeri Sembilan society. Here, owners simply ignored the importance of their houses, claiming that they were not their problem (Chapter 5, section 5.3.1). Not only that, they did not feel any sense of belonging as they did not live there.

Ultimately, the sense of place cannot be ignored as it is an important element that reflects the identity of both self and group, human behaviour and mental health towards maintaining the quality of the environment (Najafi et al., 2011).

The importance of place also relates to people’s attitudes. Experts’ attitudes towards the conservation of TMHs are varied. Not all of them felt appreciated because people have different expectations. For them, it is vital to conserve the TMH for the needs of today because it reflects our culture and who we are. Some experts, like architect **E6**, see this issue differently – for him, the Malay people conserve more of an idea than its physical manifestation (Chapter 5, section 5.5.3). This issue sometimes contradicts the real situation, especially with regard to an extension to the house.

It can be said that all house owners have expanded their house without being overly concerned about the original fabric (Chapter 6, Table 6.2). Not all ideas in the past, especially in relation to the thought given by the *Tukang* to designing and erecting the house, are practised nowadays. People have tended to simply demolish their old houses and build new modern ones in their place on the same site. They may or may not carry the same ideas through when changing environment, for example, from a house built on stilts before everything changed, to one with ground foundations with a concrete slab. The main function of space may remain the same, but the layout will be different according to the owner's current needs and budget. But, if the plan, design, meaning and use of the houses have not undergone changes and still form part of a distinctive and localized traditions that will be acceptable (Vellinga, 2015).

Although they may 'consider' retaining the 'idea', owners typically do not copy or use the principles of the original fabric of the house to suit their current needs. What they tend to apply is very straightforward or '*budget architecture*' (based on their budget), which, despite being economic, is not always successfully carried out. Currently, common approaches taken towards preserving the 'idea' are by transferring the principles of the TMH into a new building. For instance, the idea of inventing the construction system of jointing (*tanggam*) might be one of the ways in which such fabric can be conserved in a modern context, as also explained by other scholars in Chapter 1, section 1.2, and Chapter 5, section 5.5.4.

In order to achieve this, all professionals should have more understanding and be knowledgeable in heritage education in order for them to be able to make the best decisions when dealing with the conservation of heritage buildings.

- Heritage knowledge

The lack of heritage knowledge and education is not confined only to the house owners, but also extends to the awareness of the building professionals, as the changes made to the houses surveyed made evident. Many changes were made with little understanding of the traditional Malay house forms, layout and space planning. When owners try to address their needs with no help from any professional, budget constraints affect their choices, as do the selection of materials available and the lack

of traditional carpentry skills (Chapter 2, section 2.7 and Chapter 6, sections 6.3 and 6.4).

There are various way in which heritage education may be delivered or promoted. As for the academic surveyed **E10**, at the moment, heritage education through measured drawings of old buildings has become one of the subjects in most of Malaysia's architectural schools. Exposing students to local heritage architecture in this way has the effect of triggering in them, at the very least, sufficient interest in the future to want to safeguard it. But this is still not enough for it to become instilled in their hearts and minds, it has to go beyond that, especially when they begin jobs as architects.

To deal with conservation works, knowledge and education in heritage is required. It is essential that changes are managed with heritage knowledge in mind. This could be in the form of rapid demographic changes (Araoz, 2013) to the local people, especially the transition phases between older and young generations inheriting their houses and stopping them from being abandoned, as has been the case in the *kampung* context of Negeri Sembilan. As explained in Chapter 5, section 5.3.2, the transition phases of transferring the inheritance of the house may be one of the challenges that ultimately leads to its abandonment. As the NSTMH is an 'architecture of the people' (Oliver, 1997) and an 'architecture without architects' (Rudofsky, 1970), there should be a basic understanding of the importance of this heritage, not only within the hearts, minds and actions of the owners, but also within their heirs as well.

Conservation does not really work through having heritage knowledge alone without proper management, especially when there is a lack of recording and documentation.

- Poor recording and documentation

Poor recording and documentation was also highlighted as one of the challenges in the conservation of the NSTMHs. These processes are either not properly conducted or are never shared as part of a 'one-stop database centre' for the NSTMH. This recommendation would probably be managed through a proposed NSTMH heritage

centre. Further discussions around this idea are explained in Chapter 8, section 8.3 and in Chapter 9, section 9.2. The best idea would be for it to form part of the Negeri Sembilan Museum. The best place for documentation to be stored would be KALAM, in an individual university with restricted access not only to the public but also to professionals, maintained through the imposition of an access fee and strict rules and regulations.

All the experts recommend better sharing of data and easy access to it by all, not solely academics. This might be easier if the basic data were available at the time they were needed to assist conservation projects, which would also avoid the need to conduct repeated measured surveys. For example, in Scotland, they have the same problem, mainly with historic houses being abandoned. The first step is to set up a 'building at risk' register. Buildings have occasionally been saved because there has been a highlighting of success stories. The data should be updated to reflect the current state of buildings through a process of annual checking. The record should be seen as a critical element in the preservation of the NSTMHs, as people could use it as a tool to produce better conservation projects.

Although the lack of traditional skills was found to be one of the challenges in the conservation of the NSTMH, without proper records and documentation we may stand to lose even more about this valuable heritage, specifically in terms of the keeping of information, photos and drawings of the traditional construction and skills. See, for example, the dismantling and reassembly projects of *Rumah Maimunah Yaakub* (HD9) and *Rumah Tukang Kahar* (HD5), as discussed in Chapter 6, section 6.5.

- Lack of Traditional skills

According to Chan and Vic (2011), timber heritage conservation receives less attention within the heritage profession. Not only this, but the lack of traditional skills also contributes to the challenges of timber conservation and is further highlighted by the scarcity of quality timber. Therefore, it is crucial to ensure the survival of such irreplaceable fabric by preventing the skills associated with it from being lost. Considerable attention is given to the continuation of these skills in Japan, as part of

their national cultural heritage (Jokilehto, 1995). That is why many of the vernacular buildings in Japan have been preserved in terms of an authenticity or relocation approach, such as that seen at the Hilda Folk Village and the Nihon Minkaen, as discussed in Chapter 3, section 3.4.2.

In addition, from author's experience, traditional skilled workers (local people) were employed to replace a new timber beam using a special technique of manually jacking and lifting up the house at the Kulturen Lund open-air museum, Sweden (Figure 8.16).

Scholars such as Watson (2013) have highlighted the difficulties in granting such jobs to modern professionals as they have tended to graduate from a different background or school of thought. The survival of such skills is also greatly influenced by local decision-making, confidence and knowledge, as well as by the market's preferences for conservation projects.

Lack of traditional skills has been an issue not only in the case of the NSTMH, but also to other TMHs in Malaysia. There is no continuation of the skills from the *Tukang* as there are hardly any left to be found (Lim, 1987 and Yaakub, 1996). Traditional skills remain relevant, however, as they reflect the Malays' identity. But without any initiative to highlight the importance of these skills, they may be lost forever. It is crucial that skills departments, such as the National Occupational Skills Standard, consider their syllabuses to be improved by integrating courses in traditional skills for the young generation and professionals.

Finding a skilled *Tukang* throughout Malaysia by conducting an inventory and gathering data also has the potential to create this link and, at the same time, document everything as a means of knowledge transfer, etc., before it is gone. Any person with traditional carpentry skills could be offered a permanent job not only at local, but also at national level too. Demand for the recruitment of workers with traditional skills should be met by local people within the local market, rather than people having to rely solely on foreign workers for these skills. Most of the house owners come to rely on foreign workers as they are cheap to hire and are readily available locally. This situation of a lack of traditional skills has contributed to the unsympathetic changes made to the original designs of many NSTMHs.



The traditional skills of the *Tukang* should be protected and continuously transferred from generation to generation in order to prevent them from being lost. Misinterpretation of the traditional basic skills may potentially harm the traditional construction system of the NSTMH.

Whether it is about a lack of traditional skills or the owners' attitudes and responsibilities, up to now, the level of attention demanded of high design architecture is hardly ever given to vernacular architecture, with it instead continuing to occupy a marginal position within architectural education (Araoz, 2013). People involved in the conservation of the NSTMHs should be responsible for their protection, regardless of their own roles and status.

- Responsibilities

Another challenge concerns responsibilities, including the lack of government support and their involvement (Wan Ismail and Shamsuddin, 2005). Most of the house owners wanted the government to support the maintenance of their houses because they could not afford to do so. At the same time, however, the government also faces issues around such cost and has no policy in built heritage, particularly in Negeri Sembilan. There are currently initiatives in place for the establishment of an act for built heritage, but these have yet to yield a result as, for example, the Negeri Sembilan Museum (NSM) does not believe it to be an urgent requirement. This is why the challenge of conserving the houses remains very much in limbo, despite the National Heritage Act having gazetted a few houses since 2005.

From the top level to the bottom (federal to state to district to local people), the protection of local heritage is still way behind, as explained in Chapter 2, sections 2.10, 2.10.2 and 2.10.3, and Chapter 7, sections 7.2.1 and 7.2.2. Only a unique case might be forwarded to be preserved and gazetted as heritage with justification but it is very rare for these to be accepted, especially when it comes to local heritage.

The professionals or officials have to obey the gazetting regulations set by the government when implementing the conservation works. The official skills and responsibilities highlighted by some of the experts, as discussed in Chapter 5, sections 5.5.3 and 5.5.4 also reflect the reality of the conservation works where there has been

less effort made to help safeguard the heritage in Malaysia. The overall management, whether carried out using a top-down or bottom-up approach, should be well planned with great cooperation from the federal, state and district levels, along with local people in the *kampung* area.

Although the NSTMH has been identified by the experts as having a special characteristic compared to others, national gazettement has not seen it as a unique heritage that needs to be highlighted and protected. Sometimes it is hard to strike a balance between conserving the fabric of the building whilst at the same time meeting the needs of the house owner when knowledge of heritage does not enter the picture (Watson, 2013). Even if there has been some degree of education, if consciousness on the part of the owner still lags far behind, the ultimate aim will not be achieved in any regard.

Education through the media might be a stepping stone to triggering awareness, not only for the public but also the policy makers and professionals. It has to be an integrated approach, taking in strategic, tactical and operational levels. The spirit of a love of heritage should be cherished in each individual, together with maximisation of the roles played by the government.

At that level, although the National Heritage Department has been in existence since 2006, they do not have enough staff to look after the thousands of national heritage properties. A separate department or agency should look into this issue of protecting our traditional local architecture before it is gone.

Almost none of the experts has managed or attempted to engage with the owners in a meaningful way. As a professional, this should not happen as they have to consider meeting the house owner's needs. It is not difficult to engage with the house owner if we know the right way of going about it. At least by convincing them, they are able to understand their roles and responsibilities in terms of protecting their houses as a heritage asset for future generations.

Furthermore, Araoz (2013) asserted that the heritage professionals must acknowledge and attempt to manage change rather than deny its inevitability, as new techniques continue to evolve. He also went on to state that understanding the full nature of historic or aesthetic values requires well-trained professionals as it entails a scholarly process. Working on a conservation project is not an easy job and as

professionals, experts must adhere to their ethics and responsibility regardless of the type of project.

In the end, there is disagreement around whose responsibility it is to look after this heritage. The research has shown that officials, experts and house owners do not seem keen on taking on the burden of responsibility. Every aspect of tackling this issue has been explored in both the macro and micro contexts but it ultimately boils down to personal preference in determining the importance of conserving this heritage and the benefits that individual parties may stand to gain. It is as much about responsibility, citizenship and safety as well as incentives.

Although some of officials have ‘power’, they have not fully utilised their roles and responsibility to safeguard this heritage, preferring instead to remain in their ‘safety zone’. This perception needs to be changed. It is hoped that this framework may trigger ways for them to be more proactive. Moreover, if we refer to the Stockholm Declaration 1998, it is part of human rights to consider the threat of radical transformation of the built environment for future generations. A better understanding and use of heritage and their individual and collective responsibilities should be respected in order to preserve the world’s cultural diversity for sustainable development, as highlighted by ICOMOS.

- Various approaches and implementations

Various experiences shared by all of the experts show a variety of different approaches. Some combine academia and practice where they are able to put theoretical aspects into action, but many others have similarly highlighted the limitation of such works. Each of them has demonstrated special, personal and differing approaches which occasionally intersect with each other. Not many TMHs have been conserved, but those that have all share similarities regarding the implementation of works when it is a federal project, which normally come from one source – the National Heritage Department (NHD).

Adaptive reuse is among the preferred approaches taken by experts to protecting and conserving the TMH. Converting a house from a place for living into a gallery or part of a museum sometimes invited different perspectives from experts

towards its conservation. This might be the case, for example, if a house conserved on its original site is different to one that has been transferred to a new site (relocation). The new surroundings are totally out of context, but people simply ignore this as long as the house can be saved, protected and appreciated enough to be referred to.

Although most of the experts are aware of the existence of the National Heritage Act 2005 in comparison to the house owners, people may not come to realise the existence of the NSTMH until it is gone. People may see a house for the first time after it has been conserved, thinking that it has always been in good condition and may not be aware of its historical background. If the house seems to attract or interest them more, they will probably take care of it from the beginning and not wait until it has started to decay and become derelict.

No successful repair project was mentioned that had been promoted by the owners and supervised by either the state or experts. Although a few projects had been completed, their success had not been directly promoted to the public as a contribution to the historic environment. Whether the project is funded by the federal or state government, it is quite rare to see the potential of the project as a showcase to others and to acknowledge it. Something has to be done to share the effort in preserving this vernacular architecture.

In consequence, by keeping a TMH as one piece in its original *kampung* setting would be much better in terms of its conservation, as mentioned by the heritage officer (E17). However, this might depend on the constraints of time and the condition and location of the house. Modern development can be unsympathetic to historical monuments, as stressed by academic (E9). Above all else, all of the experts agreed that the homeowner should be responsible for protecting their heritage property from damage. As many TMH relocations are carried out in general throughout Malaysia, this approach was well considered as established practice, even though the settings were out of context but were often very similar to those of the original site. This is further explained in section 8.2.2 and Chapter 3, section 3.4.

Sometimes, conservation works also run into difficulty depending on how they are implemented. It also depends on individuals such as experts, officials and the house owners. This might be different if the conservation works are looked at through the eyes of a policy maker, conservator, layman (public) or even the organisation,

depending on their vision and mission for saving the built heritage. In the context of Negeri Sembilan, the NSM is not committed to dealing with this issue because there is no Act regarding the saving of this heritage, as expressed by academic **E5**. Through his experience with the NSM, nothing much could be done as they were not interested in entering into further discussion on protecting the NSTMH.

Museums in the West are typically not in charge of buildings, which are instead usually run by special organisations that acquire various houses. The NSM is the only heritage organisation that exhibits buildings and their culture. It once again comes down to the question of roles and responsibilities. One way to promote this heritage is by exploration of any new possibilities about the broader preservation, such as in the form of an open-air museum or adaptive reuse, as explained in Chapter 3, section 3.4.

- Legislative context

It is important to have heritage legislation to protect and safeguard historic buildings. Without this, it is hard to enforce or re-enforce for people who are involved in the conservation of the TMH, particularly in Negeri Sembilan. All of the experts complained about the lack of historic environment legislation in Negeri Sembilan, even though the National Heritage Act (NHA) was established in 2005. This is also asserted by Rahman et. al (2015) and Mohammad (2011) that there is no specific guideline provided for conserving a heritage timber building or TMH in Malaysia from being abandoned.

This is the root of the problem in conserving the TMHs. The vernacular architecture of the TMH, or in particular of Negeri Sembilan, is not stated in any clause in the NHA, and only five out of 300 buildings represent the vernacular architecture of TMHs as protected timber structures in Malaysia.

In the context of conservation legislation and its implementation, most of the experts realised that the NHA may not be sufficiently comprehensive, especially in regard to the TMH, even less so in the Negeri Sembilan context. It is still helpful to use it, however, in addition to the Guideline for the Conservation of Heritage Buildings 2012 (GCHB). If further help to check and balance their work is required, the Burra Charter is the closest reference. The enforcement of current legislation in conservation

works has not been executed well by the NHD. For example, there is no explicit justification of their role and there is a missing link from the federal to state and to district level of a unit looking after the built heritage, especially in Negeri Sembilan and, in particular, with regard to the TMH.

Various intentions need to be carried out as part of a holistic approach through a proper proposal and level of management, whether this is done at local, state or even also at federal level. However, the NSM is planning a local heritage enactment to suit the local context by using the NHA as a close reference, which is a good start. In the end, all of the experts agreed that the government should create and ring-fence a heritage budget to protect this heritage. Otherwise, the NSTMH would not be protected.

Vernacular architecture is a source of inspiration for contemporary design (Vellinga, 2011) and as an educational tool. It has also become a 'more sustainable alternative, or predecessor, to conventional contemporary forms of architecture and their associations with excessive energy consumption, pollution and wasteful use of resources' (Vellinga, 2013, p. 571). As discussed with regard to the importance of the vernacular architecture of the NSTMH in Chapter 2, section 2.8, various possibilities could be improved in order to safeguard this heritage. One way forward would be for the heads of the *kampung* (*Ketua Kampung*) to be awarded a mandate to protect the NSTMH under their territory. At the same time, they would liaise directly with the district government or local state museum. Reporting evidence will show how the link would work from federal level to state or district levels, or vice versa.

Another way is to ensure that everyone participates, including the house owner. Giving them some form of incentive would probably be a good place start to make them believe their house should be kept intact and in good condition. Another aspect is, if possible, to retain the same function, perhaps in the form of a homestay (Ramele et.al., 2013), by enhancing it with the historical background of the house, as claimed by architect (**E1**). Further explanation of the programme (if any) should be shared amongst the owners, especially with regard to when to inject the idea of using their house as a tourist attraction (homestay programme) as part of giving it a new activity that is also able to generate income for them. All of the experts agreed that the house owner should be responsible for their house. Every single aspect of the house has its

meaning and should be kept intact and together, including the form, fabric and function. None of the experts agreed that it was sufficient to simply retain certain specific features.

Towards the end, the differences between the so-called truly traditional and modernised houses were changes to materials and technologies, and obviously, the functions performed by the houses, along with the social context of their construction. However, questions have been raised about their authenticity (Nara Document, 1994). Though the modern materials may not all be climatically suitable, they are nevertheless what people nowadays demand and can afford (Vellinga, 2007).

All elements from the interviews (house owners and experts) have covered the theoretical basis in the context of the cultural, community well-being and sense of place aspects (Vellinga, 2007; Yung et al., 2012, Bullen and Love, 2010). The understanding, appreciation, knowledge and skills, the importance of place, responsibilities, recording and documentation were integrated and used as guidance, along with some approaches from the legislative context, to provide some ideas for the proposed framework. In the end, establishing special conservation principles on this particular architecture would also be useful and made meaningful if they can be flexible enough to suit and reflect the real situation, as proposed in Chapter 9, section 9.2.

### **8.2.2 Discussion of On-site Observations (RO2)**

Systematic and direct site observation is one of the most suitable methods to use in this context to explore the changing pattern of form, fabric and function of the NSTMH. In reality, from the observations carried out, whether these were for houses *in situ* or those relocated to a new site, all of the patterns relating to changes that had been carried out, as discussed earlier in Chapter 6, proved that all of the approaches taken thus far have ignored the importance of building conservation and its context.

Some of the key findings of these critical observations are discussed further in the context of cultural, community well-being and sense of place aspects (Vellinga,

2007; Yung et.al., 2012, Bullen and Love, 2010) that represented in several themes in this sub-section:

- Changes in Form, Fabric and Function

Changes occur everywhere that might affect the climate or even humans' attitudes towards their environment. Changes also affect the conservation of form, fabric and function, which are related to one another. The form, fabric and function of a building have a very significant relationship, similar to that between members of a family. According to Relph (1976), the changing character of places is related to modifications of buildings, landscapes and people's attitudes, who continuously reflect a sense of attachment to places. When changes are made to the form, these will automatically disturb the fabric but not directly the function (or vice versa), as discussed in Chapter 6, section 6.4. The function is only affected when the intervention involves new needs with regard to the arrangement of the layout of the house. If the original is a multipurpose design, then it might not be affected much.

To accommodate the needs of the house owners, it is also relevant to apply the dynamic concepts (Uytsel and Jurcys, 2012), as promoted by the Nara Document on Authenticity (1994) and the 1999 Charter on the Built Vernacular Heritage, which highlighted that 'the vernacular embraces not only the physical form and fabric of buildings, structures and spaces, but the ways in which they are used and understood, and the traditions and intangible associations that are attached to them' (ICOMOS Built Vernacular Heritage, 1999, p. 28).

All the changes made to the surveyed NSTMHs that were affected *in situ* were explained in the summary of changes shown in Table 6.5. An eclectic approach is taken by the house owners which demonstrates their lack of appreciation towards preserving the house as local heritage (Chapter 6, section 6.4, Table 6.2). Almost all of the house owners misunderstood the house typology that involves the form, fabric and function, possibly due to lack of knowledge. Not only this, but there is also no sense of place left due to the abandonments (Figure 8.2).





Figure 8.2: Some of the abandoned NSTMHs in Rembau and Kuala Pilah, Negeri Sembilan  
*Source: Author (2014)*

There is often no respect paid to the cultural values and traditional character of the NSMTH when intervention or new works take place, especially when these result in irreversible changes being made to the original form, fabric and function of the house. The NSTMH is often going through transformations, which are often an integral part of its character that cannot be disregarded. These kind of transformations and changes have huge impacts caused by processes of decolonisation, industrialisation and urbanisation (Vellinga, 2013).

Despite this, the characteristic of ‘vernacular buildings, either individually or a whole settlement, are the best examples of the harmony among human behaviour, building and the natural environment’ (Engin et al., 2007, p.960). In addition, Sözen and Gedik (2007) asserted how modern buildings can ‘show negativeness in terms of harmony with the environment, energy usage and environmental identity’, while ‘vernacular buildings show harmony in every respect with the region where they were built’ (p. 1816).

Furthermore, Indraganti (2010) stated that ‘vernacular prototypes are getting replaced by a modern architectural idiom’, at which point, ‘once highly climate sensitive architecture and behavioural patterns are slowly getting transformed into architecture and attitudes that are irreverent to climate and customs’ (p. 2721).

It is important to understand any historical changes because they are part of the character. Some of the various transformations of the fabric and form of NSTMHs, combining misinterpretation of modern approaches, are shown in Figure 8.3. This changes also reflects more complex form in addition to the existing variation of *Serambi* as mentioned in Chapter 2, section 2.4.1. However, very few families are left, if any at all, meaning that the original lifestyle and use of the house is not alive anymore.





Figure 8.3: Various transformations of the NSTMHs (fabrics and forms) and misinterpretation of modern approaches (*bottom right*)  
 Source: Author (2014)

Changes may affect the sense of place for certain people. This is the case for people who are not attached to a place, and who have no sense of belonging and commitment to a place (Najafi et al., 2011), and certainly applies to the NSTMH. No matter whether the house owners live there or there are caretakers in place, there is still a significant relationship between people and place. To maintain the quality of the

environment, including safeguarding the house from abandonment, it will prevent the house owners from having a sense of '*placelessness*'.

The survey conducted in Chapter 6, section 6.2, Table 6.1 under house owner category D shows that about 13 houses were abandoned and, of these, two had been bought and relocated for new use. This is quite contradictory to what Relph (1976) expressed through the assertion that people will not be interested if the settings do not have any distinctive personality. Yet all of the houses have a unique characteristic, but nobody is interested in saving them, not even the heirs to the properties.

According to Najafi et al. (2011), people prefer to care for a site that holds a strong sense of place for them. Most of the young generation will return to the *kampung* area where they grew up, and where they are able to claim a sense of place. This kind of place attachment has been bonded through history or culturally (Altman and Low, 1992). Najafi et al. (2011) also expressed that people's experience, memories, culture and background influence the sense of place.

Due to modernity and globalisation, the role of place has undergone fundamental changes (Najafi et al., 2011). When looking closely at the local context of the NSTMH, it goes beyond even that. As described by Relph (1976), it also contributes towards '*placelessness*' where there is a need to explore the user's understanding, in this case, the house owners. As agreed by Najafi et al. (2011), there is an attitudinal difference between those who have a sense of belonging and those who do not. It depends greatly on human interpretations of their setting through identity and dependency (Jorgensen and Stedman, 2001).

Also, Hawke (2010) expressed that heritage contributes to a sense of place for local people. As Relph (1976) pointed out, the distinctive characteristics of a place are related to the experience of change. This change may sometimes be ignored by the house owner who may claim that what is seen today is due to their personal experience in dealing with the physical changes of the house, especially in terms of its form and fabric. However, Najafi et al. (2011) pointed out that differences in environmental attitudes will determine who feels an attachment to a particular place, or otherwise.

The two examples below illustrate how house owners have dealt with changes, and these also involved the *Ketua Kampung*'s houses, as well how they faced the main challenges as the head of the *kampung*'s house was built on the ground (Figure 8.4).



Figure 8.4: Both of *Ketua Kampung*'s; Rembau (*left*) Kuala Pilah (*right*) houses were in their current modern look while quite a unique approach is taken by the owner in Rembau (*below*) where the original house still stood in the front while the modern house was built at the back without having any linkages. *Source: Author (2014)*

Not only that, sometimes the responsiveness of the traditional shelters, for example, in Iran and Oman, was built to suit the changing needs of climate and inhabitants, including increases in family size. This is where 'the modern value of flexibility is more inherent in traditional shelters than in modern buildings' (Cain et al., 1975, p.13). In this context, the vernacular architecture allows flexibility, as has also happened in the case of the NSTMH.

It was agreed by Vellinga (2013) that 'a lot of vernacular traditions are subject to radical change and have in many cases disappeared as a result of processes of modernisation, globalisation and, increasingly, conflict and natural disaster' as well as

relocation efforts (p. 580). Besides that, all of the changes must be ‘integrated and must be easily recognisable without interfering with the unity that one is trying to establish’ (Brandi, 2005). Otherwise, the essence of conservation in vernacular architecture may disappear without it making any sense.

By using Matero’s concept model of cultural heritage as in Chapter 6, section 6.4, various interpretations can be gathered, especially those that highlight the compensation strategies that depend on the situation, as long as all three basic constructs of cultural heritage (form, fabric, function) work in balance (Matero, 2006). Changes affect naturally the form, fabric and function of the original design of the NSTMH, especially regarding the main typologies of *Serambi*, *Rumah Ibu*, and *Rumah Dapur*, but their loss and deterioration are destructive to conservation, regardless of their history and context.

Solutions are determined according to the scale of intervention and methodology approach that will balance the aesthetic and historical values, which are important to the condition of the physical form (Matero, 2006). From a programme of observation, the immediate and long-term effects of such solutions could be identified to assess the level of replacement and compensation which in the contemporary conservation, by acknowledging ‘both product and process (e.g., craft tradition) whereby knowledge and experiences are tied together’ (p.87)

According to Matero (2006), any attempt must acknowledge form, fabric, and function. For instance, ‘Ruskinian preservation favoured the fabric above all’ (p.85). The function associated with the building is varied and unique to each case which the surveyed NSTMHs further indicate the reason behind it. Compensating the loss of original fabric is not in the house owners’ priority, as function became the main priority. Prioritisation depends on many factors including cultural and social aspects, enhanced by changes of lifestyle.

The latter affects the way the house owner interact with the form and fabric of the house (see Chapter 6, Table 6.2). The main priority is given to the function in the Malays community, probably the best solution as it is more convenient for them to continue to living in it. Eventually they will compensate the form and fabric with what the house can offer in meeting their needs which influences their decisions and how they perceive the meanings of the fabric.

Although, the owners might appreciate their inherited house, they might not have any idea regarding its conservation which reflects their lacking of understanding of heritage. Ariffin (2013) highlighted that the Malays are more prone for collective meaning and memory rather than the concept of the physical integrity of a place which becomes less important especially in the context of TMH in Terengganu region. Often the siblings take a physical portion of a building as the materials have memories, treat it as a relic and build a new house around that original part in another location, though not a practice in the NSTMH. In this case, the physical manifestation of its material is crucial to them but it reflects the lack of appreciation of the integrity of the form as a single entity.

In modern practice, the methodological approach towards aesthetic and historical values should be based on traditions of individual countries (Matero, 2006) whether the intention is more towards ‘mimicry’ or juxtaposition’ of the NSTMHs’ form and its context, the changes should be looked in a positive way and should acknowledge the importance of all these concepts (form, fabric, and function), included equally in its history over time. Various input from specialists is required as they bringing their disciplinary expertise to overcome the problem in contemporary practice, including the relocation approach and its inherent changes.

- Relocation concept, open air museum, adaptive reuse and its challenges

Relocation is also part of the changes to a house’s original setting and place. This concept is an established practice, as explained in Chapter 3, section 3.4. The relocation concept is a controversial issue, and, according to the Burra Charter (2013), Article 9 (9.1):

The physical location of a place is part of its cultural significance. A building, work or other element of a place should remain in its historical location. Relocation is generally unacceptable unless this is the sole practical means of ensuring its survival. (p. 5)

A mistake can happen anywhere, including in the relocation of an NSTMH, as was especially seen in the case of *Rumah Tukang Kahar* (**HD5**) and *Rumah Maimunah*

*Yaakub (HD9)*. These relocations involved processes of dismantling and reassembly, as well as very good documentation. This applies to open-air museums, such as those popular in Scandinavia, which share similar characteristics in terms of relocating, protecting and exhibiting old buildings in a new setting (Chapter 3, Figures 3.7 and 3.8). As this approach is able to provide a degree of scientific and educational value to the NSTMH, it has to be done seriously and not casually, without knowing how to maintain it for long-term benefit and in a sustainable way.

According to the ICOMOS Principles for the Analysis Conservation and Structural Restoration of Architectural Heritage (2003), item 3.17,

Dismantling and reassembly should only be undertaken as an optional measure required by the very nature of the materials and structure when conservation by other means impossible, or harmful.  
(p. 36)

The dismantling and reassembly processes of **HD5** and **HD9** was a useful demonstration of how people come to see for the first time all of the structural and architectural elements in the NSTMHs and their connections to each other, as described in the relevant photos. The processes involve how people think, act upon and decide any suitable approaches to relocate the houses.

Apparently, some of the changes that were effected during the reassembly process could have been avoided had necessary action been taken at an earlier stage. In the case of **HD5**, the first major mistake involved the placing of the carving elements in the wrong position. This should not happen if recording and documentation processes are correctly prepared and adhered to (ICOMOS Principles for Recording of Monuments, Group of Buildings and Sites, 1996). All of the decorative elements in the house were painted and this resulted in the loss of their original colours (Figure 6.15). Although there was a new layout plan and photos to work with, this was ultimately a simple human mistake but one which had a major effect on the beautiful house that was converted into a gallery in the National Heritage compound of the Old Palace of Seri Menanti.

According to the heritage officer (**E17**) through email dated 13/11/2015, they admitted about the relocation of **HD5** after the presentation was given by the NSM.



The relocation was not regarded as having had a negative impact on the heritage value of the nationally important monument of the palace and had enabled easy monitoring for the future care of the house compared with had it been left at its original site. However, the position of the house was questionable, as was the inclusion of the colour red for new roofing materials.

Besides this, according to the guardian of **HD5**, the wall was reassembled but was subsequently taken down after the heir to the house visited and emphatically claimed that the wall had been incorrectly reassembled. At the time of writing (20/11/2015), and having been erected nine months ago (in February 2015), the wall has still to be reassembled. This issue arose not only because the house was not properly documented prior to being dismantled, but also because the people engaged in the project had no prior knowledge or experience in implementing this type of job. It was quite embarrassing to see such apathy from the contractor in terms of their responsibility for completing the project.

**E17** also mentioned that the orientation of the house was not stressed during the discussion, apart from the impact it would have on the palace. The location of the house was not considered important for **E17**, being a carpenter for the palace. Even the orientation of the house was not considered to be an important element in the erection of this house, as had originally been practised in the past. As a main characteristic of the NSTMH, the *Serambi Pangkal* or *Serambi Hujung* should face the *Qiblah*. This was contradicted with the orientation of the palace (Figure 6.12). The photos also show that the replacement of *Tiang Seri* is also questionable (Figure 6.13) and could be considered as the second major fault.

Project **HD9** illustrates a similar approach to *Rumah Tukang Kahar* (**HD5**), which shows that people will do whatever they wish, especially in the main spaces of *Serambi*, *Rumah Ibu* and *Rumah Dapur*. The fabric might look the same, but ‘the use’ and ‘the feel’ above all, especially the new extension of all columns, may be very different. A special characteristic of the TMH, as mentioned in Chapter 2 (Figures 2.1 and 2.2), is that all of the elements of the TMHs are moveable and this is demonstrated by these two projects.

**HD9** can be considered as a transformation from its normal and original height. This house extended the existing column with a new ‘*tanggam*’ system (jointing) that

is quite a risk. This resulted in the height of the stilts eventually being increased to about 10 feet (Figure 8.5). The proportions of the house were seriously affected and it lost its character as a result. This was a major change that happened as the house was reassembled to suit its new use as a guest house. It also led to the misinterpretation of the NSTMH, especially for the young generation.



Figure 8.5: Original condition of the house prior to it being dismantled (*left*), the current state of the house after reassembly (*right*), original measured drawing-front elevation (*below*)  
 Sources: Author (*left*), contractor (*right*), KALAM (*below*)

Introducing new elements will sometimes help to create a new look and ambience but the end result depends very much on how these are implemented. In this case, if a professional in the conservation field had been employed, it would have been possible for major mistakes to be avoided. According to Mr. Yusoff, in charge on behalf of the owner of *Yayasan As Sofa* (email dated 15 April 2015), an architect was involved, and he mentioned that there is a proposal for a second phase involving the construction of a new concrete building adjacent to the rear of the traditional house to strengthen the house structures, which does not make much sense.

A trial-and-error approach is sometimes applied on site when installing new main staircases, and this can prove controversial, as can be seen here. It is a waste of material (good hardwood) and is time-consuming as the design should be finalised prior to the project being started (Figure 8.6).



Figure 8.6: The initial idea with a trial-and-error approach – eight columns, blue arrows indicate omitted columns (*left*), the final idea of four columns (*right*)  
Source: Author (2014)

It can be considered that the case of **HD9** has been handled better than that of **HD5**, as the latter seems at least to have been reassembled slightly better. According to the timeline from the day of dismantling until it had been completely reassembled, case **HD9** took about five months, compared to more than a year for **HD5**.

Even though they made an addition to the structure, the building itself was not compromised because it was not that extensive as they wanted to add it to the *Rumah Dapur*. As they are planning a new concrete building at the rear to strengthen the house, it can only be hoped that this will not detract from or disturb the original design of the house.

Unfortunately, in both of these cases, despite the best intentions, correct procedures were not followed and there is need for guidelines. Traditional methods were not adhered to, the wrong materials were sometimes used in addition to the wrong type of connection, too many nails were used and, above all, the paint used for all of the artworks threatened to hide all of the original features.

Even referenced and position recorded on the fabric for both houses were beyond expectation (**HD5**-Figure 6.8(d) and Figure 6.15 (left), **HD9** Figure 6.22 and 6.24) as it should be marked on the temporary tape as in Figure 8.7 rather than on the fabric in order to conserve the original fabrics.

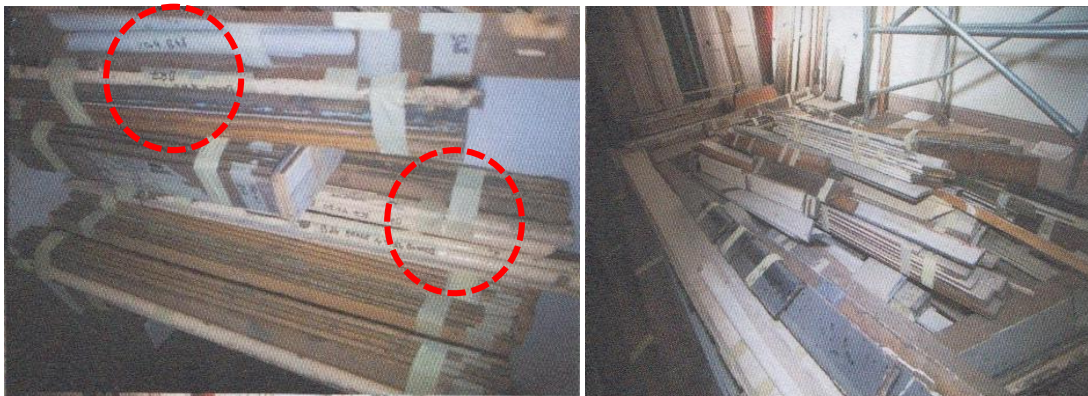


Figure 8.7: The best way to mark the removed elements on the temporary tape.  
*Source: Scott (2014)*

The house owners and contractors actions may well have been different had they given proper consideration to the conservation of the house from the outset. Again, in both cases, it is evident that no one with any specific conservation knowledge was involved. So, perhaps in the first place, the owners or contractors never thought about it, which is even worse, as this mentality goes up to institutions like the NSM and therefore exposes the root of the problem.

One further example where the same approach but different techniques were employed by the same owner is *Yayasan As Sofa*, Rembau, which is an NSTMH that was converted into an office (Figure 8.8). Several differences can be found:

- The extension of a new column on top of the existing original one with stained glass and wood carving to increase the volume of space (Figure 8.8-*red arrow*).
- The use of new concrete columns and beams as a base or platform to support the original house structure (Figure 8.8- *yellow arrow*).



- This house was merged with another *Rumah Ibu* at the rear of the house to create a new space.
- The use of new elements such as new windows and a decorative concrete staircase.



Figure 8.8: The Yayasan As Sofa took another approach where they increased the volume of space (*Rumah Ibu* and *Serambi*) by adding an extension of the column on top the original column (with stained glass) and putting the whole house on a raised concrete platform. The use of air-conditioning (purple arrow).

Source: Sulaiman (2015)

#### • Other Examples

As mentioned in Chapter 2, section 2.13, another example is the relocation of various NSTMHs: Terengganu, Perak, Pahang and Selangor were relocated to the Malay Heritage Museum in Universiti Putra Malaysia using roofing materials requiring less maintenance, and with new paint for easy maintenance (Figure 8.9). The new setting of the whole layout of the houses did not follow any kind of proper plan or master plan. The relocation was instead based on whatever site was available and the new

orientations of the houses were not considered at all. They were not all erected at the same time due to budgetary constraints.

Even though the houses were to be used as an educational tool, they should still have been set up according to TMH principles. All visitors, especially students, will learn the correct way to appreciate them in addition to avoiding misinterpretation of their basic understanding of the principles and characteristics of the TMH.

This example is a combination approach taken by an individual, in which selected TMHs were relocated and subsequently clustered in what appeared to be an OAM approach. When placed on the available land nearby, people started to appreciate them, especially architecture students. Such an approach to relocation and adaptive reuse as a ‘gallery’ is quite common nowadays in Malaysia, whether for personal or public use. These examples illustrate the most successful projects, and, according to Vellinga (2007), respect and retain the original TMH with an added contemporary layer that provides value for the future. Although there was use of new, modern materials for roofing, this generated minimal interference with the other materials in use to ensure the appropriateness of its potential use (Yung et al., 2012).

These houses were saved from demolition and aided communities and the government in their quest to reduce the environmental, social and economic costs of development and expansion, which had an indirect impact on sustainability (Yung et al., 2012; Bullen & Love, 2010).



Figure 8.9: Relocation of selected TMHs at the Malay Heritage Museum in UPM; Negeri Sembilan (*above-left*), Perak (*above-right*), Terengganu (*below-left*), and Pahang (*below-right*),  
Source: Yusof (2015)

Another case of dismantling and reconstruction of selected TMHs was undertaken by the Forest Research Institute of Malaysia within their area, as part of their educational activities. Killman et al. (1994) suggested that it is important to understand timber and its properties as well as to appreciate original joinery skills. Such projects show that the person involved in the conservation of the TMH is required to have great discipline and experience, especially when it comes to dismantling an old house (Killman et al., 1994).

Besides that, it is important to use the right tools to dismantle a TMH (as in Table 10, Killman et al. 1994). According to the same authors, the use of nylon ropes can create problems as they may stretch under tension. The use of rope made from Manila is encouraged in the dismantling process. In the context of **HD5** and **HD9**, the use of nylon rope in place of a crane showed that the traditional way of erecting the house still applied in this context, for both the dismantling and reassembly processes.



Although the structure was heavy, they still managed to do it. But in contrast, others might look to use more modern methods (e.g. a digger) to assist in re-erecting their houses, as seen in Figure 8.10.



Figure 8.10: One of the modern ways of re-erecting the relocated TMH using a digger in the Malay Heritage Museum compound (*right*), and manually (*left*)  
Source: <http://muziumwarisanmelayu.blogspot.co.uk/>

Some dismantling approaches also differ from one case to another. Figure 8.11 shows two different approaches, the relocation of *Rumah Pahang* (UPM in-house), and the other is *Rumah Bugis Selangor* (Ahmad consultant conservator). Both houses were relocated to different sites. The *Rumah Pahang* was dismantled without having any ‘temporary roof’ whilst a temporary roof was put in place for *Rumah Bugis Selangor*. However, the benefit of having the ‘temporary roof’ for both processes was important to protect the structure from the rain that might cause damage to the timber property.



Figure 8.11: The Pahang TMH (*left*) and Selangor Bugis house (*right*) show different approaches to the dismantling of the houses. One has a temporary roof and scaffolding installed, and the other does not.  
Source: <http://muziumwarisanmelayu.blogspot.co.uk/> (*left*) and Ahmad (2015) (*right*)



The practice of '*Usung Rumah*', or lifting up of the house, will disappear, as reported by Bernama (25 March 2015) and as has traditionally been practised in the past, due to site constraints (flood, health conditions, etc.) (Figure 8.12). As other countries have successfully relocated properties piece by piece, such as at Kulturen, Lund, Sweden, etc., and as explained in Chapter 3, in order to become an open-air museum, the similar example here is to jack the house up by replacing the new beams manually, as in Figure 8.13.



Figure 8.12: The '*Usung Rumah*' concept.

Source: <http://www.sinarharian.com.my/rencana/amalan-usung-rumah-bakal-lenyap-1.372641>  
[Accessed 26 May 2015]



Figure 8.13: Manually replacing the new timber beams in Kulturen, Lund, Sweden.  
Source: Author (2014)

The maintenance aspect, whether due to the relocation or not, has to reflect the holistic approach of minimum disturbance to the form, fabric as well as the function of the house. According to Hills and Worthing (2006), preventive maintenance is the least destructive of all conservation interventions, as it involves the proper monitoring of a building's condition with formal and informal inspections to prevent fabric loss that is driven by functional and cost considerations. In addition, Hills and Worthing (2006) also stressed that the most significant constraint is owners' lack of skill in carrying out maintenance themselves, in combination with their lack of knowledge. While, Ariffin (2013), asserted that 'matters on authenticity never become an issue as long as the repair process is carried out following the house conditions' (p.77).

Furthermore, as highlighted by Bullen and Love (2010), there are also many problems associated with adaptive reuse, such as the technical difficulties inherent in working on heritage buildings and the fact that materials are no longer readily available. Even if the correct materials can be obtained, there is no guarantee that any suitably qualified craftsmen will be available locally, or even nationally. This has a corresponding impact on the project's economic viability and relies heavily on the introduction of legislation that imposes some form of restriction on building requirements and which may offer substantial financial incentives in the form of tax concessions (Bullen and Love, 2010).

OAM or adaptive reuse is very relevant to the context of the TMH in Malaysia. Many different approaches have been taken from the various examples shown and they all support scholars regarding the adaptive reuse approach as one of the best solutions for safeguarding this heritage. Not only that, the abandonment and redundancy issue will be denied. The learning of lessons from vernacular architecture that can be applied to contemporary architecture is a bonus in relation to the social, economic and environmental aspects through a holistic, integrated and critical approach to sustainability (Foruzanmehr and Vellinga, 2011).

### 8.2.3 Discussion of Document Reviews (RO3)

Earlier in **Chapter 7**, Figures 7.2, 7.5 and 7.7 highlighted the key findings for Research Objective 3 (RO3) in appraising and synthesising the existing conservation principles on vernacular timber structures both locally and internationally. The chapter elaborated on the significance of reviewing all of those documents as a means of identifying possible elements that could be adopted and adapted to suit to the Negeri Sembilan context.

The document reviews were analysed purposely with the aim of finding a basic framework to use in the creation of an initial framework for the establishment of a set of conservation principles for the NSTMH. Furthermore, the triangulation and integration of the elements were carefully laid out towards establishment of the initial CPF and then validating it prior to establishing the final CPF. Some of the key observations taken from the document reviews will be discussed in this sub-section.

- Local context

From the process of reviewing the local legislation context, there was a mixed situation that highlighted the lack of heritage protection of the traditional Malay house in general, and the NSTMH in particular. From the reviewed documents shown in Figure 7.5, it is possible to see the critical stage that this unique heritage will reach if no further urgent action is taken. Even pieces of legislation at the national level: NHA (**N1**) and the *Garis panduan Pemuliharaan Bangunan Warisan* (Guideline in the Conservation of Heritage Buildings) (2012) (**N5**), or legislation at a more local level: (Guideline for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (2007) (**L6**) do not highlight the importance of this heritage.

To make matters worse, Negeri Sembilan also does not have its own heritage legislation. This is more crucial as the NSTMH is likely to have greater local as opposed to national importance. The one and only specific case that is important to the national context is the Old Palace of Seri Menanti, Kuala Pilah, Negeri Sembilan, which is the tallest timber structure in Malaysia, and was built in 1902.

According to the Director of the NSM (**E15**), they are in the process of developing their local heritage enactment. Although all the relevant enactments from

other states have been compiled, they have decided to use only the existing NHA as guidance and to adapt it to the local context after receiving advice from the heritage officer (southern zone) from the National Heritage Department. During the discussion, I also personally encouraged them to incorporate the protection of the NSTMH in the proposal as there is no provision for the protection of such heritage stated in the NHA. The result is still questionable.

The experiences in local contexts, such as in Melaka state, are more advanced. From the findings in Figure 7.5, a Malacca Preservation and Conservation of Cultural Heritage Enactment (**L1**) could be the most significant one in terms of its potential contribution to the development of a special legislative framework or set of conservation principles for the NSTMH (Figure 7.5). Besides being suited to the local context, **L1** was also used by PERZIM (Melaka Museum Corporation) as their guidance in protecting heritage, including that of the TMH. According to PERZIM (**E16**) (email on 8/10/2015), they had already gazetted the individual TMHs and the entire traditional *kampung* as *heritage kampung* in 2001.

The criteria for gazetted houses and *kampungs* include the Malay culture and customs that continue to be practised. This also includes not only the physical building but also culture and traditional business. In terms of maintenance, the owner of a TMH in Malacca can make an application through PERZIM to the Melaka Preservation Fund and Tourism Ministry. The PERZIM only preserves a specific house that is more than 50 years old and that has a unique design as the only one of its kind in Melaka. It must also be of historical significance to the *kampung* or to the wider area of Melaka, as well as having the potential to contribute to the area's economy.

With little funding, they still managed to protect the house. Based on the interview with museum officer (PERZIM) on 01/11/2013, although they make requests every year for an increase to the funds allocated to the conservation of heritage buildings, these are continually rejected. They therefore have to plan and spend wisely, based on the funds received, which tend to provide cover for only two TMHs each year. The funds are sponsored by local agencies at the state level, and not directly at the federal level.

From the analysis, only some elements were highlighted to be used in the proposed framework to suit to Negeri Sembilan context especially the definition, care

or repair of cultural heritage, funding and incentives, conservation programme, restriction of planning submission and the establishment of a local register.

- International context

In order to gain a broader context, international charters were used as the review of the international context also highlighted similar approaches, depending on the specific aims of the charters used. From the specific vernacular charters to historic environmental policy, they show the way those documents were structured to cover different elements that are useful for a document specific for the NSTMH. Parts of the documents are directly relevant to how to organise and formulate the NSTMH-CPF. The management of change was quite a new concept. The important aspects were the ways forward for these changes and how they might be managed in a sustainable way. For example, in Scotland, the management of change has become a priority, as outlined in the Scottish Historic Environment Policy (SHEP) (2011), which also highlights how to protect the changes in their historic environment:

The challenges of historic environment especially to the vitality of modern life, is by identifying its key characteristic and recognise the boundaries within which change can continue so that it enhances rather than diminishes historic character.

(SHEP 2011, Item 1.6, p. 6)

The historic character should be well protected, conserved and managed and should not be allowed to become a barrier to any development, where it should be well understood and managed intelligently, as also highlighted in the SHEP (2011):

The historic environment should be valued as an asset, rather than thought of as a barrier to development. It reinforces the identity of communities and can add value (integral part).

(SHEP 2011, Item 1.7, p. 6)

The protection of the historic environment is not about preventing changes. It should be managed intelligently and with understanding.

(SHEP 2011, Item 1.8, p. 6)

As highlighted by Scottish Ministers in the SHEP (2011), all changes should be intelligently managed with understanding as part of their vision for the benefit of future generations. In addition, the historic environment should also be used culturally, economically, educationally and socially as a means of further securing it.

Furthermore, the management of change is quite a contemporary idea and approach, and was mentioned in the Burra Charter (2013). It forms one of the elements in the initial framework that was drawn from both the national and local contexts in addition to the international context.

Several elements were identified and selected to be used in the proposed framework according to their significant to the protection of NSTMH in as a local context. This includes education, training and awareness, record and documentation, location, knowledge, traditional skills and technique, involvement, replacement, monitoring and maintenance, the concept of place and value based on the analysis done in Chapter 7, Table 7.7.

These two contexts of documents (Chapter 7) were triangulated with the data from the interviews (Chapter 5) and building observations (Chapter 6). Any conservation approaches must be assessed on its own merits against the identified values which guided by internationally accepted principles.

### **8.3 Overall Interpretation**

All findings were integrated based on the theoretical basis that were highlighted in Chapter 2 and 3, and includes the significant of the NSTMH in context of cultural, community well-being, sense of place and environmental benefits (Vellinga, 2015; Yung et. al., 2012; Bullen and Love, 2010) to the house owners, experts and relevant parties in the built heritage environment in Negeri Sembilan. These aspects were explained in a form or articles that were specified according to the specific categorization in the concept of developing the initial framework (Figure 8.14, 8.15 and 8.16).

As discussed in section 3.7, the relocation concept was explored in this research as its sparks some debates among the international charters, especially in the vernacular architecture context. As supported by Gregory (2008), some of them are

against this concept and some sanction it as the last solution. According to the Burra Charter (2013) Article 9.1:

The physical location of a place is part of its cultural significance. A building, work or another element of a place should remain in its historical location. Relocation is unacceptable unless this is the sole practical means of ensuring its survival.

(ICOMOS Burra Charter (2013), p.5)

Also, ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value (2010) highlighted that,

In exceptional circumstances, a structure of cultural heritage value may be relocated if its current site is in imminent danger, and if all other means of retaining the structure in its current location have been exhausted. In this event, the new location should provide a setting compatible with the cultural heritage value of the structure.

(ICOMOS New Zealand (2010), p.4)

However, in Malaysia, the relocation concept is well accepted to protect them from being abandoned, as the original construction system of the NSTMH has the flexibilities to accommodate the dismantling and assembly's needs. This system has been proved by (Brand, 1994; Lim, 1987) as the TMH was designed nearly like a perfect solution to control climate with flexibility in design including the multifunction use of space and sophisticated prefabricated system of extension within its environment. The houses that were left abandoned as referred to Table 4.1, Figure 5.1 and Figure 8.2, had a potential to be relocated and turn into an open air museum or adaptive reuse in Negeri Sembilan if there is no longer interest to conserve it especially by the owner and their heir. It is crucial that this option be taken into consideration as it could save and protect these abandoned NSTMHs from being destroyed and lost its tangible value forever. The conservation of the NSTMHs will also enrich the learning experiences of the younger generations through its education programme as

part of a living museum activities as discussed in section 3.4.2. The relocation sometimes provides evidence on the site that reflects the reality posed by the process and resulting changes in the form, fabric, and function which are often made drastically and in an inappropriate way as mentioned in sections 3.7 and 6.5.

That is why Matero's model of cultural heritage was adapted to capture all that. The on-site survey was fundamental, and that is the only way to record changes how the house owners interact and appreciate the form, fabric and function as discussed in Chapter 6 and section 8.2.2. The changing pattern of alteration was unpredictable regarding the level of awareness, understanding and appreciation of the NSTMH by the house owners who made unsympathetic changes to the form, fabric as well as function. Rahman et al., (2015) asserted that changes in hands were also one of the factors why the inherited TMHs's in *Kampung Morten* became a threat to the original design and its landscape. 65% houses were changed due to spatial needs and family enlargement while only 35% houses remain unchanged. Matero (2006) also asserted that anyhow, 'the loss, weathering and compensation play a major role in constructing heritage.'

Community well-being may involve long-term benefits via a system of sympathetic recycling that can continue to be used and appreciated, rather than allowing the houses to fall into a state of disrepair. A sustainability approach such as adaptive reuse will help to reduce the environmental, social and economic cost of continued urban expansion and development (Vellinga, 2007; Yung et al., 2012; Bullen and Love, 2010). This will then contribute to the liveability and sustainability of the communities. It also permits innovative solutions to solve the redundancy and abandonment issue of the NSTMHs.

Various findings were discussed that highlighted no 'sense of place' towards 'placelessness.' Glassie (1990) agreed that apart from no 'sense of place', 'participation and engagement has been lost in modern society that leads to ignorance, weakening of cultures and a decline in personal empowerment.' (p.9). According to Orbasli (2008), in some cultures "the 'sense of place' must be greater than the material value of the built form. In such cases, authenticity resides in place, design and the spirituality of place more than in material relics' (p.52). There are some flexibilities which conservation allow as highlighted in the Nara Document (1994) that the cultural



heritage must be considered and judged within the cultural contexts to which it belongs, and in this case for NSTMH is the *kampung* area. Sometimes, the architectural features are heavily influenced by the local cultural elements such as by the rituals context, traditions, philosophies, customs, politics, economy and social roles' (Bahauddin et.al, 2012).

As mentioned in Table 3.2, Orbasli (2008) also asserted that any conservation approach should be working with the evidence on site, understand the layers that involve the changing of fabric through over time from its setting and context. As each conservation problem is different from one another, it must be assessed on its own merits but guided by the accepted principles internationally (Orbasli, 2008). The changes are expected to continue to happen over time which also reflects the different interpretation of each generation to repairs etc.

As discussed in section 8.2, the lack of participation and engagement from the owners reflects the loss of sense of place that somehow it no longer holds any significance to its surroundings as before. It also leads to no appreciation, no awareness, and lack of understanding and heritage education. As a consequence, the survival of the NSTMHs should be tackled through a holistic management approach combining the experts' contribution, enforcement of specific heritage legislation as well as managing change's concept.

Rahman et al. (2015) suggested that by acknowledging the TMHs as heritage buildings, it may pursue the house owners to maintain their house as an ecotourism attraction such as homestay program. In addition, conserving the heritage values of the TMHs could prevent further threat even to the whole *kampung* as well. In the end, there is a need to establish conservation policy on TMH as well as the intangible Malay cultural practices (Rahman et al., 2015).

The organisation of these local, national and international documents were useful in setting up the new NSTMH-CPF with a structure that was adapted to the Malay cultural context and recognised balancing its use for people who are used to the local and national documents already. The fundamental framework was adapted from the Burra Charter as explained in section 7.2.4.

An understanding of local motivations is crucial to ascertain what lessons can really be taught and learnt in terms of sustainable design (Foruzanmehr & Vellinga,

2011). Most importantly, perhaps, a focus on the transmission, development and amalgamation of building traditions will enable the development of an approach to architecture that acknowledges the existence of change, but which, rather than lamenting and trying to stop it, tries to understand how and why it takes place and attempts to ensure, through critical assessment and engagement, that the changes made are sensible, appropriate, and, most of all, sustainable (Vellinga, 2007, p. 126).

That is why this research findings (interviews of the house owners and experts, on-site observation of the changing patterns of form, fabric and function including reviewing heritage documents (local, national and international) were triangulated to establish the conservation principles framework for the NSTMH.

The research also applied the concept of template analysis in the development of both the initial and final frameworks (Chapter 4, section 4.5) as an outline for developing a final NSTMH-CPF, which constitutes the main contribution of this research. The concept of developing the initial framework can be seen in Figure 8.14.

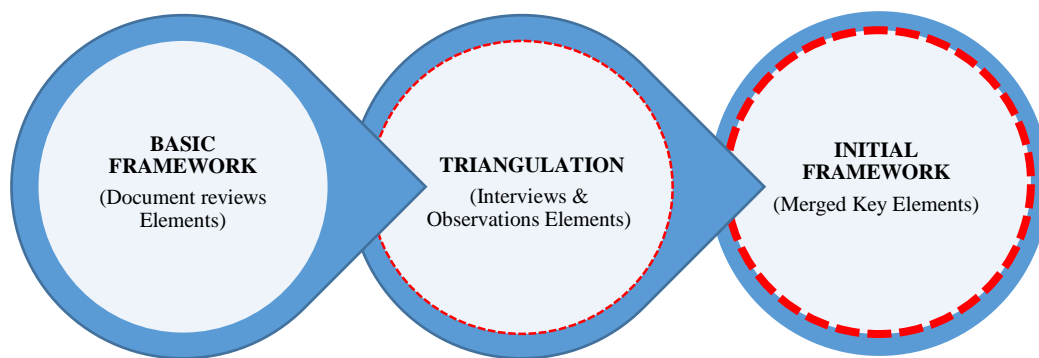


Figure 8.14: The concept of developing an INITIAL framework.

The basic framework was based on the findings in **Chapter 7 – Document Reviews**. It also was validated via the triangulation of interviews (**Chapter 5**) and on-site observations (**Chapter 6**). Thus, the inclusion or exclusion of the elements in the framework have already been revised and verified during the process of Document Reviews, as outlined in **Chapter 7**, section 7.1.1, prior to development of the initial framework. Furthermore, all of these key elements were integrated and carefully laid out towards development of the initial Conservation Principles Framework (CPF) for the NSTMH, as can be seen in the process shown in Figure 8.1

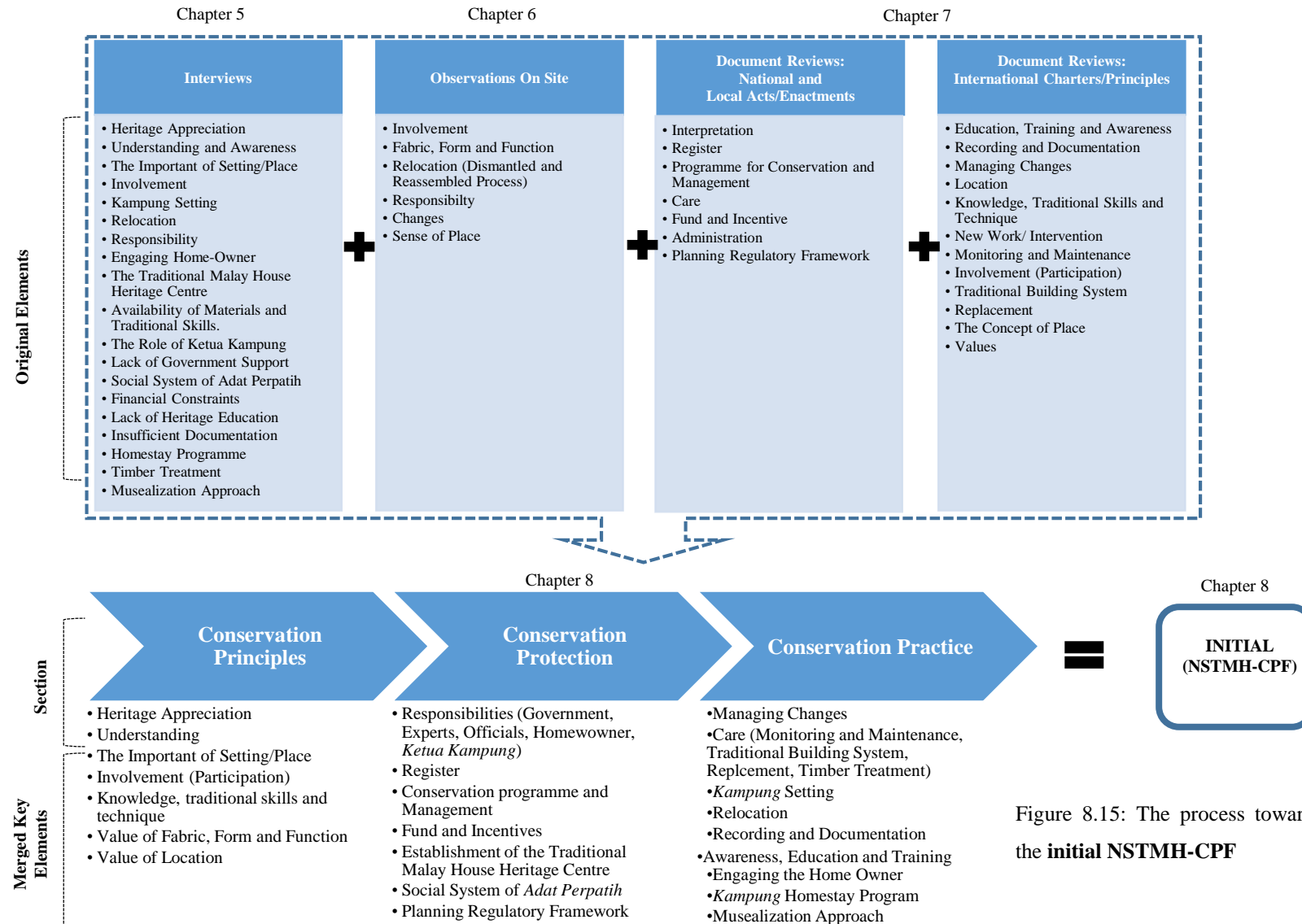


Figure 8.15: The process towards establishing the **initial NSTMH-CPF**

The INITIAL framework can be summarised as follows:

- The elements were reflected upon particularly to highlight the important themes that were derived from the data. These include elements such as heritage appreciation, understanding and awareness, the importance of setting/place, involvement, *kampung* setting, relocation, responsibilities, engaging the house owner and establishing a traditional Malay house heritage centre. In addition, we can also add the availability of materials and traditional skills, the role of *Ketua Kampung*, lack of government support, the social system of *Adat Perpatih*, financial constraints, lack of heritage education, insufficient documentation, homestay programme and timber treatment. It also involved involvement, form, fabric and function, relocation, changes and sense of place.
- As there is often an overlap of these elements, all of the original key elements were then merged into 24 and subsequently grouped into four key sections. The first is a preamble of definitions, the second section, 'Conservation Principles', comprises heritage appreciation, understanding, the importance of setting/place, involvement (participation), knowledge, traditional skills and technique, the value of fabric, form and function and the value of location.
- The third section, 'Conservation Protection', focuses more on responsibilities or specific roles. It includes experts, the local authority, academics, museums and industry, in addition to the homeowner. This section also includes the register, conservation programme, regulatory planning framework, funds and incentives, the establishment of the NSTMH heritage centre and the *Adat Perpatih* social system. It is a very important development of the proposed NSTMH heritage centre to protect and conserve their built heritage environment for future generations. There is further explanation in the final framework in Chapter 9, section 9.2, Article 14.
- The final section is 'Conservation Practice' which looks more at implementation. It covers managing changes, care (monitoring and maintenance, traditional building system, replacement, timber treatment), the *kampung* setting, new work and intervention, relocation, recording and documentation, education, training and awareness, in addition to engaging the homeowner and commencing a homestay programme.

Once the INITIAL framework has been constructed, the researcher will then need to revise it to reveal any inadequacies arising from within it. This stage is purposely designed to remove, add, extend, improve or merge the INITIAL framework. Revision of the INITIAL framework was validated and triangulated from the expert reviews, and will be explained in Chapter 9. The INITIAL framework concept was summarised and developed from the key elements gathered in Chapters 5, 6 and 7 prior to being merged into four sections, as explained in Figure 8.16.

Nevertheless, this INITIAL framework will be further validated via an experts' review involving Malaysian as well as Scottish experts. However, it should be noted that all key elements will be subject to exclusion or inclusion in the framework validation phase of this research. Thus, the INITIAL framework will be revised prior to the production of the FINAL framework of the research.

Figure 8.16: The proposed summary of the initial **NSTMH-CPF** concept.

Sections	Key Elements
<b>1 Preamble</b>	<ol style="list-style-type: none"> <li>1. Why do we need to conserve?</li> <li>2. The Negeri Sembilan TMH is recognised by:</li> <li>3. Who is the NSTMH-CPF for?</li> <li>4. How to use this NSTMH-CPF?</li> <li>5. Where does this NSTMH-CPF apply to?</li> <li>6. Interpretations/ Definitions</li> </ol>
<b>2 Conservation Principles</b>	<ol style="list-style-type: none"> <li>1. Heritage Appreciation</li> <li>2. Understanding</li> <li>3. The Important of Place               <ol style="list-style-type: none"> <li>1 Sense of Place</li> </ol> </li> <li>4. Involvement               <ol style="list-style-type: none"> <li>1 Homeowner</li> <li>2 <i>Ketua Kampung</i></li> </ol> </li> <li>5. Traditional skills and technique</li> <li>6. Value of Fabric, Form and Function               <ol style="list-style-type: none"> <li>1 Changes</li> </ol> </li> <li>7. Value of Location</li> </ol>
<b>3 Conservation Protection</b>	<ol style="list-style-type: none"> <li>1. Responsibilities               <ol style="list-style-type: none"> <li>1 Experts</li> <li>2 State Government/ Local Authority</li> <li>3 Academic</li> <li>4 Museum</li> <li>5 Industry</li> <li>6 <i>Ketua Kampung</i></li> <li>7 Homeowner</li> </ol> </li> <li>2. Register               <ol style="list-style-type: none"> <li>1 Inventory</li> </ol> </li> <li>3. Conservation Program and Management</li> <li>4. Fund and Incentive</li> <li>5. Planning Regulatory Framework</li> <li>6. Establishment of the Traditional Malay House Conservation Centre</li> <li>7. Social System of <i>Adat Perpatih</i></li> </ol>
<b>4 Conservation Practice</b>	<ol style="list-style-type: none"> <li>1. <i>Kampung</i> Setting               <ol style="list-style-type: none"> <li>1 Layout</li> <li>2 Landscape</li> </ol> </li> <li>2. Care               <ol style="list-style-type: none"> <li>1 Monitoring and Maintenance</li> <li>2 Traditional Building System</li> <li>3 Replacement</li> <li>4 Timber Treatments</li> </ol> </li> <li>3. Managing Changes               <ol style="list-style-type: none"> <li>1 Change of use</li> <li>2 Disturbance Fabric</li> <li>3 Cautious Approach</li> </ol> </li> <li>4. Relocation               <ol style="list-style-type: none"> <li>1 Dismantling Process</li> <li>2 Reassembling Process</li> <li>3 Musealization Approach</li> </ol> </li> <li>5. Recording and Documentation</li> <li>6. Education, Training and Awareness</li> <li>7. Engaging the Home Owner</li> <li>8. <i>Kampung</i> Homestay Program</li> </ol>

## **8.4 Chapter Summary**

This chapter has presented analysis of the key findings used in the development of the conservation principles framework for the NSTMH. Many emerging elements were found during the process of refining the framework, from the house owner and expert interviews (Chapter 5), on-site observations (Chapter 6) as well as from the document reviews (Chapter 7) of both the local legislation and international charters/principles that were analysed at an earlier stage. These three methods were triangulated to identify suitable key elements for developing the initial framework. The basic framework for the research was based on the established Burra Charter (2013).

All the findings were integrated and includes the significant of the NSTMH in context of cultural, community well-being, sense of place and environmental benefits (Vellinga, 2007; Yung et. al., 2012; Bullen and Love, 2010) were integrated in a form of an articles that were specified according to the specific categorization in the initial framework. At the end of the chapter, an initial framework for conservation principles of the NSTMH has been produced and which consists of four sections; Preamble, Conservation Principles, Conservation Protection and Conservation Practice.

The next chapter of the thesis will contain analysis of Research Objective 5 in validating the initial framework of the research.





## **CHAPTER 9**

# **VALIDATION OF THE ‘NEGERI SEMBILAN TRADITIONAL MALAY HOUSE CONSERVATION PRINCIPLES FRAMEWORK’ (NSTMH-CPF)**

### **9.0 Introduction**

This chapter discusses the validation process for the ‘Negeri Sembilan Traditional Malay House Conservation Principles Framework’ (NSTMH-CPF), following the consultation of expert reviews. Validation is an important part of strengthening the credibility of this research by triangulating its findings through verification of the conservation experts which is also beyond the researcher’s work. This chapter will offer an overview of the validation findings and present the final NSTMH principles framework, which captures the essence of this thesis.

### **9.1 Overview of the Validation Findings**

The validation process for the NSTMH-CPF began at an earlier stage once all of the main data had been triangulated from both sets of interviews (house owners and experts), the evidence from the surveys as well as the document reviews (Figure 9.1). All of the elements listed in the initial framework (Chapter 8) were scrutinised and the framework was then finalised prior to being sent to the selected experts for validation. The revisiting process of the template analysis was applied in this chapter before establishing the ‘final’ framework as in section 9.2 (see Chapter 4, section 4.5.3).

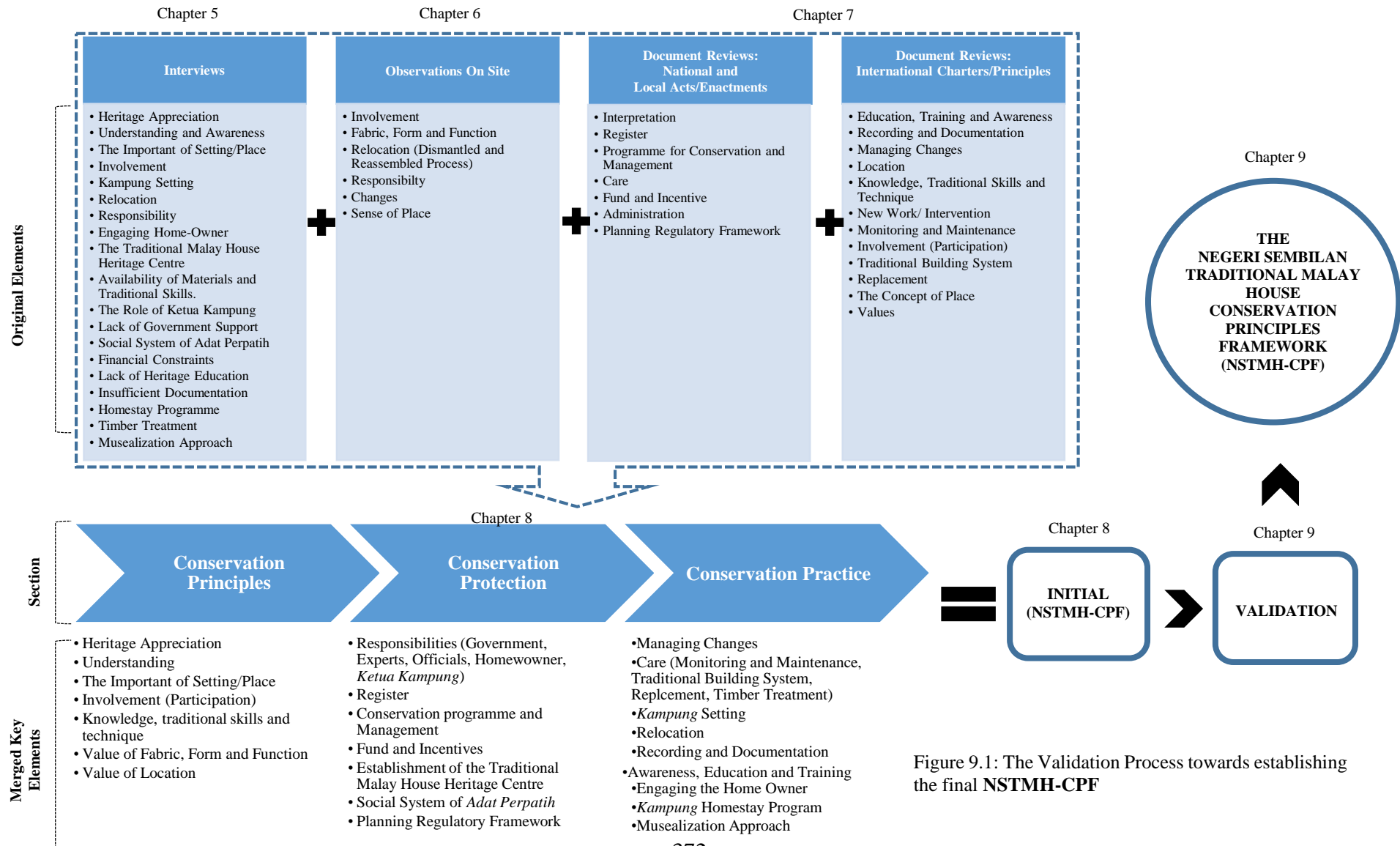


Figure 9.1: The Validation Process towards establishing the final NSTMH-CPF

For this validation process, all of the experts were chosen based on criteria that involved their experience in forming, managing and implementing conservation management plans in the historic environment as well as in complex mitigation strategies and public enquiries. The initial framework was sent to the experts by email: nine from Malaysia and three from Scotland, United Kingdom.

Although it was difficult to find experts involved in the conservation of vernacular architecture in Malaysia, this is not to say that expert with different experience were not relevant to the validation process. Given the opportunity, they were willing to provide validation and gave their best feedback, as appropriate. In the end, only eight out of twelve experts successfully returned their feedback within the time frame provided; six from Malaysia and two from Scotland (Table 9.1).

Table 9.1: The backgrounds of the experts who agreed to participate in the validation process and who returned their feedback.

NO.	THE VALIDATION EXPERTS	CODE
1.	Academic (Universiti Sains Malaysia) / Seconded to the National Heritage Department as Deputy of Commissioner: 2009-2012	EV1
2.	Academic / Deputy Director of Institute Sultan Iskandar Universiti Teknologi Malaysia	EV2
3.	Architect/ ICOMOS Committee Member/ Heritage Conservation Committee- Malaysian Institute of Architects	EV3
4.	Director of Melaka World Heritage Site Office	EV4
5.	Conservator -Anjung Teknik (Melaka)	EV5
6.	Director of Conservation, National Heritage Department (NHD)	EV6
7.	Chairman of AOC Archaeology	EV7
8.	Planning Manager of Orkney Islands Council	EV8

In general, all of the elements in the framework developed from the interview responses, on-site observation and document reviews of national and local heritage legislation as well as international charters and principles were perceived by the validation experts as ‘vital’ for development of the NSTMH-CPF. Most of the comments were quite encouraging and, at times, unexpected. The reflection, interpretation and summary of the findings are discussed in the following sections:

### 9.1.1 Preamble

As an essential introduction to the document, most of the experts agreed on the need to give a very clear direction for the framework, along with its aim and purpose, indicators on how to use the document, who the document is for and where it should be used. Most of the experts were concerned that this section should have two definitions sections for ease of understanding; the first to define the meaning of the house structure according to its typology, and the second to address the operational context.

**EV7** suggested adding the existing protective legislation and guidance in order to enhance the administrative context and current practice to which the framework adds, and also to include a statement of cultural significance at the end of the preamble which would link to the sections that follow. In general, there was agreement that by recommending conservation of the structures, their cultural values would also be preserved.

Another suggestion that was agreed was to change the classifications of house owners to Resident *house owner*, Resident Caretakers, Non-resident house owner with non-resident caretaker and Abandoned. Moreover, the conservation approaches mentioned in the definitions should be ranked in value order (high to a lower value in conservation), as in the Burra Charter, and suggested by **EV7**. In consequence, if the structure could not be conserved as it is, those proposing alteration to it should be obliged to demonstrate that the alterations are the minimum necessary to achieve their aims whilst at the same time retaining the cultural value of the structure, in addition to being reversible.

### 9.1.2 Conservation Principles

This section was considered by all reviewers to be the primary body of the document. As a theoretical section, they felt it should be given more weight as most of the principles were reflected as the backbone of the document.

Some articles need to be omitted, moved to the Preamble and referred to the Article, such as the basic principles of the NSTMH in Article 3. The relocation concept should be seen as a last resort in Article 2. Point 8 under Article 3 was arguably where **EV7** strongly disagreed that ‘the understanding of the problem means taking into account the budget’ by the care and maintenance management. As suggested by him, the available budget may limit the range of possible responses, but the problem is not altered by this fact, only the outcome of the conservation. If we accept that the cost alters the case, then everyone will simply claim that they are unable to afford conservation. Perhaps national or local government could provide modest support in cases where genuine poverty precludes proper conservation.

In Article 5, it is suggested by **EV8** to refer to the Listed Buildings and the Orkney Local List (2011) as a good practice guide for the house owner when no formal consent is required. Article 6 is good and is compatible with the Burra Charter, which could in turn be cited.

### **9.1.3 Conservation Protection**

The title of this section invited very strong comments. It is quite rare to see any Charters discussed, particularly on the protection of vernacular heritage, besides those related to principles. The main reason for including this section was to highlight and express the need to protect the NSTMHs, as they are currently not protected. It is not a law that must be obeyed, but the framework can provide some weight needed by the NSTMH, and Negeri Sembilan itself does not have any current legislation to protect its built heritage environment in general. With this intention, protection of the NSTMH could probably be improved in a way that significantly highlights its importance before it is lost if no further action is taken.

According to **EV7**, Article 9 should more strongly identify who is responsible for the specific task. **EV3** suggested that an overall party should be responsible for the safeguarding of efforts for conserving the NSTMH, to include the Chief Minister as well as the *Yamtuan Besar* (the royal title of the Negeri Sembilan State ruler) as an adviser. The new practical role of the Negeri Sembilan Museum should also be

highlighted through the NSTMH Conservation Centre, which could also possibly include the skills resources, register, monitoring, funds and implementation of the conservation. Some parts of Article 10 should be repositioned to Article 22, which deals with more under educational policies in respect to traditional skills.

The proposed document should not require the government, as ‘owner’ of the legislation, to do anything. The word ‘must’ should be omitted. Furthermore, the framework purports to be a ‘conservation principles’ guidance but this particular Article 9 is mainly about central and local government educational policies in respect of traditional skills, which is probably not entirely suitable in this context. As highlighted by **EV3**, Article 9 should stress the important role of the house owner as the primary bearer of responsibility for conserving the NSTMH, and *Adat Perpatih* should be used to strengthen this, as the NSTMH has been inherited as a family house and to help with its upkeep as a ‘family base’.

Article 10 should be rephrased. **EV3** suggested having a ratings system for the condition of houses and their surroundings, such as A (Excellent), B (Good/Moderate) and C (Weak/Critical). This could increase house owners’ motivation to achieve an ‘A’ status grading for the house, etc., with repair funds available under stipulated terms that also allow tourists to visit. As mentioned by **EV8**, the Register should also highlight past successful projects as reference for good conservation practice.

As suggested by **EV7**, Article 12 should be incorporated into a single recommendation. **EV5** suggested that all hotels and tourism tour operators working in the state should contribute to the NSTMH Conservation Fund with a token formula based on their total sales as well as an annual contribution from the state government agencies. **EV5** also suggested that the establishment of the NSTMH Conservation Centre under Article 14 should also be concerned with engaging contractors for initial conservation works only. Upon completion of these, and for ongoing maintenance works, house owners and the community would take charge under the auspices of the proposed ‘*Kampung* Cooperative Board’ for community involvement, added **EV5**. This also involves basic carpentry and building equipment, which after being supplied through the NSTMH Centre, will be kept and maintained by the ‘*Kampung*

Cooperative Board’. Besides that, as suggested by **EV5**, the Centre should be empowered to advise and negotiate with house owners and the ‘*Kampung* Cooperative Board’ in case of serious offences on the part of the house owner, prior to them being deregistered for not following the conservation guidelines or deciding not to have the house listed. This could be debatable and would require further discussion, especially when it is subjected to legislation.

As suggested by **EV8**, this section could also be titled ‘Recommendation for Conservation Protection’ as it seeks to steer in the right direction rather than impose mandatory regulations. However, **EV2** pointed out that the National Heritage Department should be a centralised agency for controlling and managing heritage issues, including the NSTMH.

#### **9.1.4 Conservation Practice**

This section is quite common in any Charter or Principle, where it addresses the best way to implement theoretical concepts in reality through practising them. It is an action that provides guidance to people involved in conservation of the NSTMH. An interesting part to be inserted here is about the relocation approach, as it is more relevant to the current NSTMH context. It also brings some recommendation or a way forward for conserving this heritage.

**EV6** mentioned that temporary roofing is not needed during the dismantling process but rather during reassembly. However, observation of both cases and the literature show that it definitely is important that both processes are provided with temporary roofing as the NSTMH is constructed entirely from timber and natural materials that are prone to decay, potentially resulting in further damage to the fabric.

It is practical to choose one administration of records for Articles 10 and 21 to avoid any contradictions, as highlighted by **EV7**.

Under Article 22, **EV3** suggested making efforts to galvanise the people of the *kampung* to conserve the village and the communal legacy that ultimately conserves the NSTMH and other cultural heritage. These may be practical steps such as cultural

education, media, clubs, bodies, etc. **EV5** also supported encouraging schools to form ‘Heritage Clubs’ to foster understanding of the rich cultural and social framework of the ‘*Adat Perpatih*’ and the tangible part of the community. All of these would be undertaken with support from and connections to the NSTMH Conservation Centre. From a macro perspective, **EV3** suggested working with conservationists to conserve forests and re-plant hardwood timber trees to provide wood for future use in NSTMHs, as practised at the national level by the Forest Research Institute Malaysia (FRIM).

**EV5** suggested starting a ‘Pilot Project’ to test the framework and mechanism of the proposed NSTMH Centre together with the State Government, Corporate and public involvement from a selected individual NSTMH or manageable small ‘*kampung*’ under Article 23. For Article 24, it is an excellent idea that could be the central plank of an ‘Economics’ part with various references to the costs of conservation, as mentioned by **EV7**. Besides this, **EV5** suggested forming a rural community cooperative board or company for more organised involvement in the ‘*Kampung Homestay*’ programme. In this way, financial incentives and rewards are channelled through the community cooperative board for distribution, to further bind and benefit the community and not individuals, ultimately encouraging community involvement. Last but not least, **EV5**, made an earlier suggestion that there is a need for a coordinated one-stop centre that incorporates the NSTMH Centre, State Tourism Board and State Government for engagement to publicity and calendar events, and also strategic marketing with travel agencies.

#### **9.1.5 Overall Comments of the Initial NSTMH-CPF**

Overall, most of the experts involved in the validation process gave their full support and positive feedback to the establishment of the NSTMH-CPF. In general, most of the experts agreed that this framework is part of an extensive research work on the NSTMH, a very well-written, comprehensive and well thought-out conservation principles framework and an excellent first draft. Besides that, it is an additional value and a great contribution to the knowledge of building conservation in Malaysia, added **EV1**. **EV8** highlighted that the proposal is a document similar to an international charter or act of legislation in its form but that without adaptation could equally be an



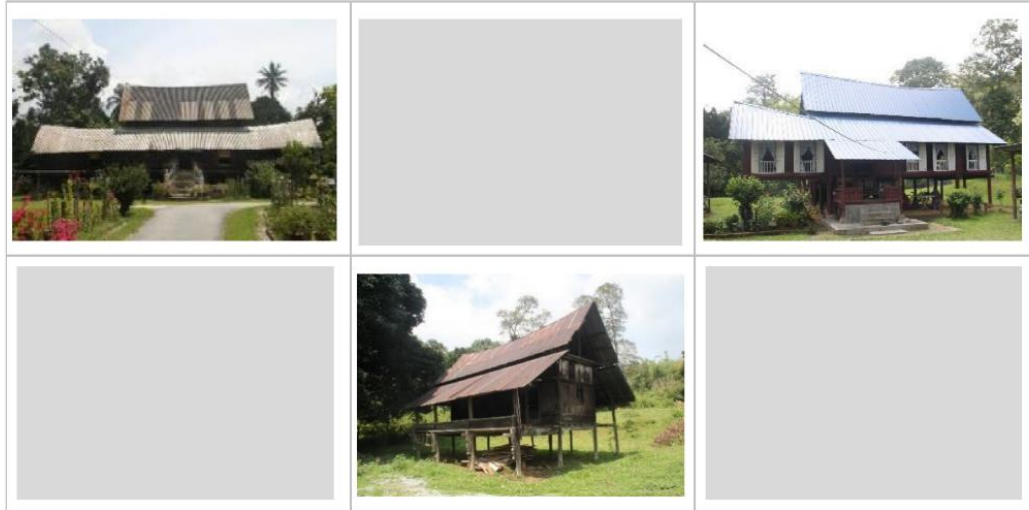
informative guide to raising awareness. Only one respondent (**EV7**) enquired as to whether it would be possible to split the document into two parts: Part 1 (About Conservation Issues) and Part 2 (Social, Educational and Administrative Context). If the second section failed to find an audience, the first section would still be capable of standing on its own as an example of best practice in the conservation of these structures in their social and physical landscapes. The suggestion from **EV7** is quite acceptable but may not be possible within the current time constraints of this PhD research.

Overall, the validation process was applied to every section; Preamble, Principles, Protection and Practice, producing the final version of the NSTMH-CPF, as shown in Figure 9.2.

## **9.2 Presentation of the Final NSTMH-CPF**

The final NSTMH-CPF is the main contribution of this research. The consideration and incorporation of all of the experts' comments through the validation process was a valuable experience. Different elements were added and taken out during the course of the validation process, in addition to others being expanded in response to the experts' comments.

The final NSTMH-CPF consists of four sections which cover Preamble, Conservation Principles, Conservation Protection and Conservation Practice. The framework started with the contents where the first section of Preamble explained how to the framework should be used, who should use this framework and where does this framework should be applied. Then, it moves on to the definitions with illustrations. Next, based on the findings, the most important elements were elaborated according to the identified sections of the Conservation Principles, Conservation Protection and Conservation Practice. The final NSTMH-CPF is presented in Figure 9.2.



**The Negeri Sembilan Traditional Malay House  
Conservation Principles Framework (NSTMH-CPF)**



## Contents

Sections	Key Parameters
Preamble	<ul style="list-style-type: none"> <li>• Why do we need to conserve?</li> <li>• Who is the NSTMH-CPF for?</li> <li>• How to use this NSTMH-CPF?</li> <li>• Where does this NSTMH-CPF apply to?</li> </ul>
Conservation Principles	<ul style="list-style-type: none"> <li>• Heritage Appreciation</li> <li>• Understanding</li> <li>• The Important of Place</li> <li>• Involvement</li> <li>• Knowledge, traditional skills and technique</li> <li>• Value of Fabric, Form and Function</li> <li>• Value of Location</li> </ul>
Conservation Protection	<ul style="list-style-type: none"> <li>• Responsibilities</li> <li>• Register</li> <li>• Conservation Program and Management</li> <li>• Fund and Incentive</li> <li>• Planning Regulatory Framework</li> <li>• Establishment of the Traditional Malay House Conservation Centre</li> <li>• Social System of <i>Adat Perpatih</i></li> </ul>
Conservation Practice	<ul style="list-style-type: none"> <li>• <i>Kampung</i> Setting</li> <li>• Care</li> <li>• Managing Changes</li> <li>• Relocation</li> <li>• Recording and Documentation</li> <li>• Awareness, Education and Training</li> <li>• Engaging the Home Owner</li> <li>• <i>Kampung</i> Homestay Program</li> </ul>

## The Negeri Sembilan Traditional Malay House Conservation Principles Framework (NSTMH-CPF)

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### P r e a m b l e

The Negeri Sembilan TMH (NSTMH) is one of Malaysia's cultural heritage that represents the ingenuity of traditional craftsmanship and a distinctive social practices as it is a reflection of the community's history and tradition.

The survival of this vernacular architecture is threatened due to rapid modernisation, urbanisation, socio-economic transformation, the loss of its characteristics due to changes and development, misinterpretation, as well as serious issues of abandonment and obsolescence.

Many NSTMHs, some more than 100 years old, are not protected. Very few have been conserved as heritage compared to other types of colonial buildings. Only five out of over 300 buildings have been gazetted as National Heritage or Heritage in Malaysia.

There is no framework for the conservation of the traditional Malay house, and following all relevant related local heritage Acts, including the National Heritage Act 2005, and International Charters or Principles, it is necessary to establish a Negeri Sembilan Traditional Malay House Conservation Principles Framework (NSTMH-CPF) for the care and protection of this specific vernacular heritage.

This framework guides the conservation and management of the Negeri Sembilan TMHs as places of cultural significance, but could also be applied to other types of TMH in Malaysia as they share similar characteristics such as standing on stilts, raised floors, a pitched roof and the use of local timber as a construction material.

#### The Negeri Sembilan TMH is characterised by these basic principles:

- Curved roof at both ends.
- Main typologies: *Serambi (Serambi Pangkal, Serambi Tengah, Serambi Hujung)*, *Rumah Ibu* (with *Loteng*-Attic) and *Rumah Dapur*.
- Good-quality *Chengal (Penak)* timber.
- Expression of local, regional and traditional character that is responsive to the environment especially its breathable walls and full-height windows, open internal space (multipurpose

function), embellishment (colours, patterns, positions and functions), use of natural building materials and colour, green compounds (landscape and coconut trees).

- The traditional expertise of a *Tukang*. This house is the product of a skilful individual.
- An effective response to the social system (*Adat Perpatih*), the religious system, the very specific environmental constraints (tropical climate – hot and wet).
- Response to available surrounding materials (palm leaves, *Chengal* timber, etc.).
- Effective applications of traditional construction (*tanggam* system and built without nails), sophisticated system of prefabricated extensions raised on stilts and a hierarchy of floor levels.
- Time capsule (coin) as evidence of the date of birth of the house when first erected, concealed under the *Tiang Seri* (main central column).
- Two specific shapes of the columns; *tiang pecah lapan* (octagon shape) or *tiang pecah empat* (square shape). The decorative column and *tiang pecah lapan* represent the high status of the owners.

These basic principles reflect the cultural significance of the NSTMH. In general, by conserving the structures, the cultural values are also preserved.

#### Why do we need to conserve the NSTMH?

There is no specific legislation, policy or structure to protect the NSTMH in Negeri Sembilan as it does not exist in general for all built heritage.

The number of traditional houses are deteriorating and in need of urgent protection.

Only a small number of traditional craftsmen have the knowledge and skills to built these houses.

If this element of cultural property dissapear, the area will lose a special characteristic that is unique to its local surrounding.

Section 59 (1) Conservation of heritage object in the National Heritage Act (2005) states:

*“the owner or custodian of a heritage object shall keep the heritage in good condition and in a secure place.” (p. 129)*

These issues are of global reference, as vernacular structures all over the world are facing serious problems of dilapidation and are extremely vulnerable (Built Vernacular Heritage, 1999).

#### **Who should use this NSTMH-CPF?**

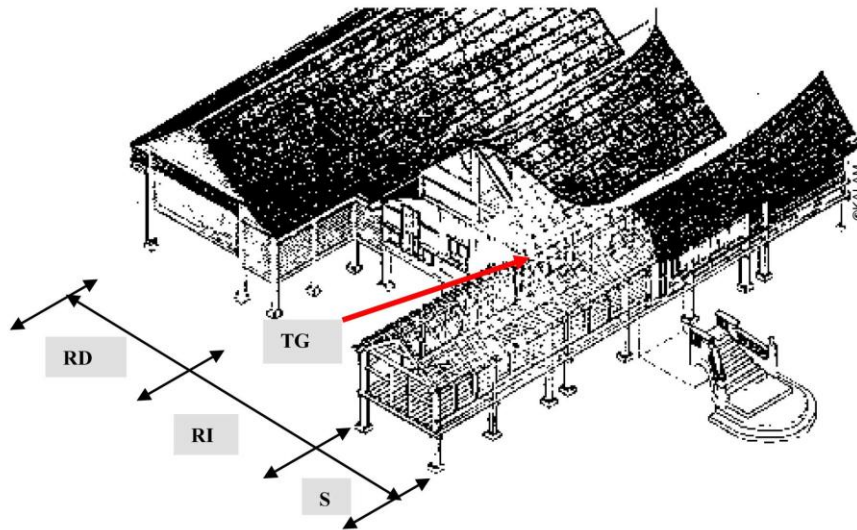
This framework is a guidance tool for those involved in the conservation of the NSTMH, including *house owner(s)*, experts, authorities, Village Security & Development Committee (JKKK), academics and students.

#### **How to use this NSTMH-CPF?**

It is a self-contained document and should be read as a whole.

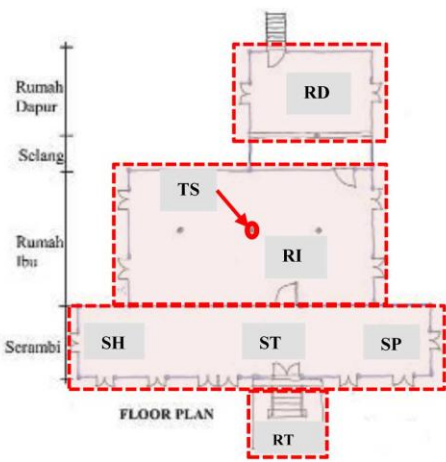


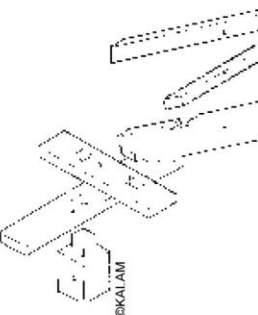
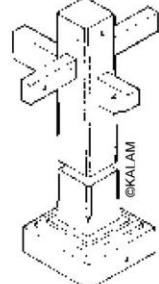
#### **Where does this NSTMH-CPF apply?**

The particular area of application is the Negeri Sembilan Traditional Malay House, but it might also be applied to other TMHs in Malaysia. Additionally, when gazetting an NSTMH as a heritage building, it should comply with the requirements of the National Heritage Act 2005 as well as the Guidelines for the Conservation of Heritage Buildings (2012).



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Articles	Explanatory Notes/ Images
<p>Article 1: Definitions</p> <p><i>Negeri Sembilan Traditional Malay House (NSTMH)</i>: A long-roofed type of traditional Malay house with a curved roof at both ends. Its typology is quite specific, and the definition of the main spaces follows.</p>  <p style="text-align: right;">©Author (2015)</p> <p><i>Serambi</i>: Also called <i>verandah</i>, a space with low headroom before entering <i>Rumah Ibu</i>. The first space to entertain guests (male). (S)</p> <p><i>Serambi Pangkal</i>: The left-end space of <i>Serambi</i> when entering the main door. A space to entertain people. (SP)</p> <p><i>Serambi Hujung</i>: The right-end space of <i>Serambi</i> when entering the main door. A space to entertain chieftains and religious people. (SH)</p> <p><i>Serambi Tengah</i>: The middle space of <i>Serambi</i>, often the original <i>Serambi</i>. (ST)</p> <p><i>Rumah Ibu</i>: The main core of the house (“Mother of the house”). The first block to be built (between <i>Serambi</i> and <i>Rumah Dapur</i>), the largest area with the highest floor level (signifying its social hierarchy), including a private area for family members. Sometimes has <i>Loteng</i> (an attic). (RI)</p> <p><i>Rumah Dapur</i>: A kitchen block at the back of the house. (RD)</p> <p><i>Rumah Tangga</i>: A porch built over the house’s main staircase. (RT)</p> <p><i>Tiang Seri</i>: Main post (central) of the first columns to be erected. Crafted with beautiful motives, patterns and colours that differ from those on other columns. (TS)</p> <p><i>Tiang Gantung</i>: A suspended column supporting the roof structure and <i>loteng</i>. Can be seen in the <i>Serambi</i> area. Sometimes crafted with different beautiful motives and colours to convey the high status of the owner. (TG)</p>	 <p>©Author (2015) (TS)</p>  <p>©Author (2015) (TG)</p>  <p>©KALAM</p>  <p>©KALAM</p>

**Tanggap System:** One of the main joining methods applied in a traditional Malay house, connecting two or more timber components to form the main structure (column & beam, column, beam & rafter) without the use of nails. (T)

**Tukang:** A skilled craftsman and carpenter, a specialist in work carried out by hand and traditional details.

**Kampung:** A typical village incorporating a loose agglomeration of traditional Malay houses (private). It is a reflection of the cultural and social structure of the Malay people. Distinctive characteristics: house and its compounds, coconut and fruit trees, cultural activities (engage in collective efforts or mutual assistance (*gotong-royong*)), *Surau* (a small-scale mosque), paddy field, rubber estate, etc. In this context, we refer to a Traditional *Kampung*.

**'Usung Rumah':** The practice of moving a house from one location to another using villagers' manpower and the spirit of togetherness.

**Form:** The shape, configuration, physical appearance, character, size, scale and proportions of an NSTMH.

**Fabric:** All physical material of an NSTMH including components, finishings, fixtures, contents, colours, textures and objects.

**Adat Perpatih:** A customary law wholly related to a democratic matrilineal social system applicable in Negeri Sembilan only.

**Cultural Heritage Significance:** "Cultural heritage having aesthetic, archaeological, architectural, cultural, historical, scientific, social, spiritual, linguistic or technological value" (refer to the *National Heritage Act, 2005, p. 101*).

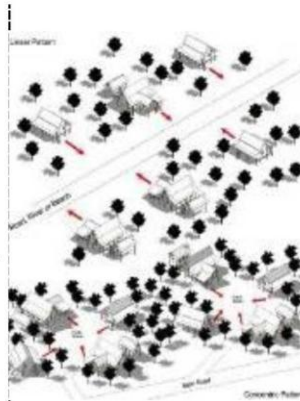
**Cultural Value:** The value of the NSTMH that exhibits a relationship with *Adat Perpatih* through its social lifestyle, status, religious and in relation to the planning of the structure and layout, form, fabric and function as well as the techniques and materials used in construction.

**Change:** The natural or man-made process that affects the continuity of a historic building and its environment. It happens in various ways and impacts upon the original form, fabric and function, such as in the cases of demolition, new use, adaptation, alteration, modification or even musealization that has been adapted to meet various needs.

**Setting:** The content and context of the past, current and surrounding environment of a place associated with the structure, contributes to its cultural significance with no loss of values.

**Appreciation:** A sense of obligation in valuing, respecting and recognising the good qualities and a greater *understanding* of the importance of the NSTMH and its conservation.

**Understanding:** The ability to apply a sense of knowledge, comprehension, awareness, notion, judgement and perception on the appraisal of the basic principles, values and uniqueness of the NSTMH.



Source: Firrdaus (2012)

See also Article 18

See also Article 2

See also Article 3



*House owner:* Owner of the NSTMH. Registered owner or the holder of the customary tenure of the land. Inhabitants are categorised into:

- a) Resident house owner
- b) Resident caretakers
- c) Non-resident house owner with non-resident caretaker
- d) Abandoned.

*Experts:* Professional Architect, Conservator, Academic.

*Officials:* Government officer (conservation agencies), local and planning authorities.

*Local Authority:* Shall have the same meaning as that outlined in the Town and Country Planning Act, 1976 (Act 172): "Any city council, municipal council, municipality, district council, town council, town board, local council, rural board or other similar authority established by or underwritten law" (refer to *Town and Country Planning Act, 1976 (Act 172)*, p. 11).

*Local Planning Authority:* Shall have the same meaning as that outlined in the Town and Country Planning Act, 1976 (Act 172) Section 5: "In relation to an area, any land or building, means the local planning authority, as so construed, for the area in which the land and building is situated" (refer to *Town and Country Planning Act, 1976 (Act 172)*, p. 11).

*Lembaga Muzium Negeri Sembilan:* Negeri Sembilan Museum Board; a body that handles the maintenance, preservation, retention and documentation of the historical and cultural treasures of Negeri Sembilan.

*Ketua Kampung:* Headman (Head of the village).

*Undang (Luak):* A ruling chief within the *Adat Perpatih* social system.

*Dato' Lembaga (Suku):* A leader of the *suku* (clan), above the *Buapak*.

*Buapak (Perut):* Originally from *ibu* (mother) *bapak* (father), a leader of group (*suku*) appointed by members of his clan (*suku*).

*Register:* Any NSTMH (more than 100 years old) is proposed to be recorded in a register established and maintained under *the NSTMH Conservation Centre* or *Lembaga Muzium Negeri Sembilan*.

*Conservation Management Plan:* A plan for conservation prepared under section 46, National Heritage Act, 2005.

*Conservation:* All the approaches and processes to retain the cultural significance of a historical asset. It includes maintenance, preservation, restoration, reconstruction, rehabilitation, adaptation or any combination, and also the management of change.

*Maintenance:* The continuous protective care and prevention (regular maintenance) planned for a building and its context.

*Preservation:* Maintaining a building in its existing state and preventing it from further deterioration or from a state of dilapidation, with proper maintenance undertaken where necessary.

*Restoration*: Recovering or returning the form or element (structurally or aesthetically) to its original state by replacing missing original elements. This may involve full or partial restoration or any combination of other conservation approaches.

*Reconstruction*: The recreation, reproduction or return of a previously removed structure to a known earlier state with the introduction of new materials and construction, based on sound evidence: a reinterpretation of the past.

*Adaptation*: Change the original use to accommodate a new use (internal layout and fabric). The integrity of a new function to the original fabric and form should be considered appropriate to enable its continuation and its usefulness, especially in sustainable ways.

*Relocation*: A form of reconstruction, moving a building to a new place, but the context and its setting is lost. It involves a dismantling and reassembly process.

*Open Air Museum*: A place to exhibit collections of multiple old buildings including their recreation in a landscape setting of the past. It often includes living history to maintain a particular traditional lifestyle by the communities.

See also Article 19, under musealization approach.

## Conservation Principles

### Article 2: Heritage appreciation

- NSTMHs built more than 100 years ago should be conserved and not left abandoned or in a risky state.
- NSTMH has various important values, not only architectural, cultural and historical ones but also the rarity of local distinctiveness that act as a rich educational resource.

### Article 3: Understanding

- *Understanding* is a continuous process and evolve through time to help inform decision-making about its management and maintenance.
- To achieve the best outcome of any *conservation* approach, a full *understanding* of the principles of the NSTMH should be the main priority as it is about identifying the intangible values that attach to them and their physical significance (*form and fabric*).

See also Preamble (the NSTMH characteristics)

### Article 4: The importance of place

- The NSTMH is part of the *kampung setting* that determined by the social relationship (cultural and lifestyle).
- Each *kampung* should protect their *setting* by conserving the traditional characters through a proper management of change.
- Changes should also be based on proper studies and assessments, according to the relevant condition of the house and the needs of the *house owner(s)*.

Sense of Place

- The reversible approach should follow traditional means where necessary – historically, technically and practically.

Should be consistent with Article 3, 6, 7, 13, 17, 18 and 22.

#### Article 5: Involvement

- Their involvement is a major principle as it recognises their indispensable bond with their houses and environment, a key aspect of vernacular architecture that is worth transmitting.
- Consideration should also be given to the hierarchical level in the social system of *Adat Perpatih*, which involves *Undang (Luak)*, *Dato' Lembaga (Suku)* and *Buapak (Perut)* in line with the *Ketua Kampung*. Their presence is still relevant in all parts of Negeri Sembilan for the intangible heritage of community activities as well as the physically tangible part (the building fabric), especially amongst elderly men with knowledge of the historical relationship.

House owner  
(See also Article 9)

#### Article 6: Traditional skills and technique

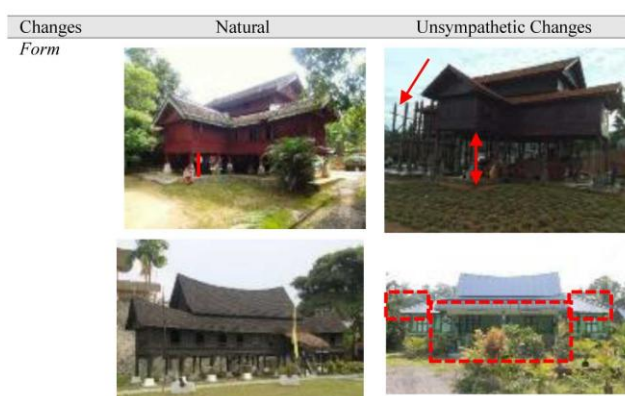
- There are not many joiners or *Tukang* left, and the lack of traditional skills is a fundamental problem. Such skills and technique are essential to conserve the specific structure and care of the *setting*. The skills need to be retained, recorded and passed on to new generations.
- According to the Burra Charter (2013):

*"Traditional techniques and materials are preferred for the conservation of significant fabric." (Article 4.2, p. 4)*

#### Article 7: Values of form, fabric and function

- Any *conservation* approaches adopted in relation to the NSTMH should respect their *cultural values* and their traditional character, especially their *form, fabric* and function.
- The NSTMH sees frequent transformations, which in most cases are an integral part of its character that cannot be disregarded and often no respect that causing irreversible *changes* to the original *fabric, form* and function) (Figure 1).

*Changes*  
*"In some circumstances modern techniques and materials which offer substantial conservation benefits may be appropriate with supported by firm scientific evidence or by a body of experience." (Burra Charter (2013) Article 4.2, p. 4)*



- The changing of *form* due to a lack of knowledge and understanding of special characteristics of the Negeri Sembilan TMH heritage.

- Awareness and the role of the *house owner(s)* should be highlighted to minimise unsuitable *changes*.








	<ul style="list-style-type: none"> <li>• <i>Serambi</i></li> <li>• <i>Rumah Ibu</i></li> <li>• <i>Rumah Dapur</i></li> </ul>		
<i>Fabric</i>	    <ul style="list-style-type: none"> <li>• Timber</li> <li>• Palm leaves</li> </ul>		<ul style="list-style-type: none"> <li>• <i>Change</i> to new materials (zinc, metal deck, glass, new cheap timber, concrete, brick, vent block, ceiling board).</li> <li>• New paint colour.</li> <li>• Less comfort to the occupants when changing to new materials (zinc/metal deck) without a ceiling.</li> </ul>
Function	Refer to Article 1. <ul style="list-style-type: none"> <li>• <i>Serambi</i> (entertain male guest)</li> <li>• <i>Rumah Ibu</i> (private; sleeping, praying)</li> <li>• <i>Rumah Dapur</i> (cooking, washing, eating)</li> </ul>	 	<ul style="list-style-type: none"> <li>• The new function of the main spaces: <i>Serambi</i> and <i>Rumah Ibu</i> (rarely used) and <i>Rumah Dapur</i> (as new kitchen, dining, living, bedrooms, toilet and guest entertaining space).</li> </ul>

Figure 1: The various *changes* to the *forms, fabrics* and functions of the NSTMH

From the survey done, there is evidence of systematic changes that structures have been modified in four ways, as shown in Figure 2.

The traditional typology of the NSTMH's *form* and *fabric* were affected by incorporating new usage patterns of function in a new layout of the *Rumah Dapur* and *Serambi*. These systematic changes can be generalised in the changing patterns of the NSTMH.

All such changes are promoted by the house owner(s), but they impact upon the values and architectural integrity, leading to misunderstanding and misinterpretation of the NSTMH for future generations.



Figure 2: Systematic evidence of the changes to the NSTMH

- Any such *changes* should be reversible.
- As it also relates to social and economic issues, the sustainable management of *change* should make fair judgements based on *fabric* evidence, current lifestyle needs as well as the availability of resources.
- Demolition of significant *fabric* is not acceptable, only minor removal is allowed where the circumstances of use require.
- If *adaptation* is a solution for preventing an NSTMH from being abandoned, the essential *form* (character, structure), *fabric* and function should be defined so that the intervention demonstrates how to respect them.
- Disturbance of significant *fabric* should be avoided where necessary and be minimised as far as possible.

See Article 19 (Adaptive reuse)

Disturbance Fabric

#### Article 8: Value of location

- The NSTMH should be preserved on the site and as part of the *kampung*, as this is meaningful to its context and environment.
- This article refers primarily to the group and associative *cultural values* of the structure, which make a crucial contribution to the cultural significance of the structure and should not be considered in isolation from it.

## Conservation Protection

#### Article 9: Responsibilities

- All relevant agencies are responsible for the safeguarding of the NSTMH and is expected to handle and manage the skills,



	<p>resources, register, monitoring, funds and implementation of conservation works.</p> <ul style="list-style-type: none"> <li>Architects and conservators are encourage to promote the engagement of traditional tradesmen to increase the quality of technical input on NSTMH heritage <i>conservation</i> practices.</li> <li>Collaboration between the local State Government with educational institutions and the Department of Skills Development, National Occupational Skills Standard (NOSS) in promoting specialist traditional building skills and materials and internship programmes are encourage.</li> <li>Holistic approach is encourage in adapting building conservation of NSTMH in any level of architectural syllabus courses.</li> <li>The <i>Ketua Kampung</i> has an important role in local coordination, to facilitate the <i>house owner(s)</i> about any issue pertaining to the building conservation in their <i>kampung</i>.</li> <li>Most of the NSTMH were inherited family house, therefore, the heir or the <i>house owner(s)</i> will usually look after the general upkeep of the house but need guidance from the experts to maintain the outstanding values of the house.</li> </ul>	<p><i>Experts</i></p> <p>State Government/ <i>Local Authority</i></p> <p>Academic</p> <p><i>Ketua Kampung</i></p> <p><i>House owner</i></p>
Article 10: Register	<ul style="list-style-type: none"> <li>The formation of a Register of all extant NSTMHs is recommended through an Internet-based and accessible to all for sharing and dissemination.</li> <li>The purpose of the <i>register</i> is to ensure that any alteration, repair or demolition that may affect an NSTMH of special interest (i.e. more than 100 years old) is controlled.</li> <li>Any development in a registered NSTMH and its <i>setting</i> should preserve the original characteristic and appearance of any special interest (architectural or historical) regarding its layout, design, materials, siting, scale and proportion and its uses.</li> </ul>	<p>Inventory (map, list &amp; description)</p> <p>Should be consistent with Article 20.</p>
Article 11: Conservation programme and management	<ul style="list-style-type: none"> <li>The collaborative effort amongst relevant agencies to incorporate any conservation programme for the <i>conservation</i> of the NSTMH with funding and strategic aims.</li> <li>Any <i>house owner</i> of a registered NSTMH should be encouraged to submit a proposal to carry out <i>conservation</i> works.</li> </ul>	<p>See Article 13</p>
Article 12: Funding and incentives	<ul style="list-style-type: none"> <li>Funding should be made available to <i>house owner(s)</i> carrying out repairs privately if their house is more than 100 years old.</li> <li>The owner of any registered NSTMH may apply to the State Government for tax relief for the cost of the works.</li> </ul>	
Article 13: Planning regulatory framework	<ul style="list-style-type: none"> <li>Establish the need for appropriate local legislation on built heritage, with particular reference to the NSTMH.</li> </ul>	

- Inclusion on the *Register* does not mean an NSTMH is listed. Once the Negeri Sembilan Heritage Act is established, a registered NSTMH (see Article 10) should be protected at local level.

Article 14: Establishment of the Negeri Sembilan Traditional Malay House Conservation Centre

- An establishment of the new NSTMH Conservation Centre as a centralised body is encourage to manage all aspects of the NSTMH, including conservation, maintenance, monitoring, funding, training, awareness, education, recording and documentation to safeguard the heritage for future generations.
- The Centre would become an educational resource for people of all ages to learn about the NSTMH.
- Establish an online directory specialisation (materials, contractors, architects, conservator, *Tukang*, etc.) to facilitate industry/public (including *house owner*) access to resources.

See Article 21

Article 15: Social system of *Adat Perpatih*

- Any conservation works carried out on the NSTMH should consider and retain the significant values of *Adat Perpatih* that already exist within the house in terms of its layout and *setting*.

See Article 13.

## Conservation Practice

Article 16: *Kampung* setting

- *Kampung* layouts vary from one to another as the houses are located apart from each other, and the layout of a house includes a broader compound that should be conserved and maintained. It involves not only the specific house but the whole *kampung*.
- Any fruit trees shall be maintained and their removal should be avoided as this has a direct effect on the character of the *kampung* and its *setting*.

Layout

Article 17: *Care*

- Keeping the quality of good *maintenance* of a NSTMH in a sustainable routine is important to ensure the continuation of its *form*, *fabric* and function.
- Regular *maintenance* is vital as it also supports the survival and expansion of traditional skills.
- The role of the prefabricated system of historical extensions should also be well understood to enhance the flexibility of the original design by avoiding misinterpretation.
- The replacement or timber-matching must also respect the relevant historic and aesthetic values identified in the character appraisal of a NSTMH.
- The use of local hardwood is essential and it is recognised that maintaining the original material is difficult if there is no source or there are no skilled *Tukangs* available. A choice must also be made

*Care* is an action of concern that preserves the qualities within an appropriate setting by looking after, keeping safe, exercising caution, protecting, respecting, controlling and managing in the correct fashion.

Monitoring and *Maintenance*

Traditional Building System

Replacement (removed fabric)

	to reduce costs and the effort of regular <i>maintenance</i> by the <i>house owner(s)</i> .	
Article 18: Managing changes	<ul style="list-style-type: none"> <li>• <i>Changes</i> may be necessary to incorporate new lifestyles within the significant cultural environment of the original <i>form, fabric</i> and function. <i>Changes</i> are undesirable if they negatively impact any of these values.</li> <li>• Value can also be negatively impacted through addition, use of inappropriate materials, abandonment, natural decay, the loss of which devalues the house's <i>cultural heritage significance</i> affected from the changing of the original characters and appearance of its <i>form, fabric</i> and function. <i>Change</i> should be conducted sensitively.</li> <li>• Broad options should be explored and strategies adopted to mitigate the impact of <i>changes</i> by promoting minimal intervention.</li> <li>• <i>Changes</i> over time should be appreciated as important aspects of vernacular architecture when these are made harmoniously with the existing character, without compromising its original characteristics, but it should be recognised that not all <i>changes</i> are worthy of conserving.</li> <li>• Conformity of all parts of the building to a single period will not normally be the goal of work on vernacular architecture. This depends, however, on the specific aims of a project. It is sometimes impossible to return to the original design, even if this is acceptable, unless all of the historical documentation is available.</li> <li>• A cautious approach to <i>change</i> is encourage to avoid distorting the <i>form</i> and <i>fabric</i> of an NSTMH by conjecture only and through detail research.</li> </ul>	Cautious Approach
Article 19: Relocation	<ul style="list-style-type: none"> <li>• According to the Burra Charter (2013) Article 9 (9.1):  <p><i>"The physical location of a place is part of its cultural significance. A building, work or other element of a place should remain in its historical location. Relocation is generally unacceptable unless this is the sole practical means of ensuring its survival."</i> (p. 5)</p> </li> <li>• Flexibility in the construction system of the NSTMH is the main advantage and many NSTMHs have been relocated for various reasons (adaption to resorts, museums, galleries, guest houses, etc.), to ensure their survival.</li> <li>• The '<i>usung rumah</i>' concept is still acceptable as a last resort.</li> <li>• Proper storage is essential (covered, avoiding exposure to rain and intense heat).</li> <li>• A temporary roof is essential to be erected prior to the dismantling and reassembly work being carried out in case of heavy rain or wet conditions.</li> </ul>	Dismantling and Reassembly Process



	<ul style="list-style-type: none"> <li>• A more meaningful trend for <i>relocation</i> is towards an <i>Open Air Museum</i> approach and often seen as a safe way to protect and exhibit old buildings. This approach could give a scientific and educational value to the NSTMH and seems to be the most established practice throughout the country.</li> </ul>	<i>Open Air Museum</i>
	<ul style="list-style-type: none"> <li>• To safeguard the NSTMH, <i>adaptation</i> to a new use is probably a final decision. There is an option for <i>relocation</i>, but the appropriateness of this should be very carefully considered, especially where flexibilities built into the original design may be compromised.</li> <li>• Adaptation of NSTMH for a new use is acceptable when it has minimal impact on the cultural significance of the house. Minimal change to significant fabric with considering alternatives are encouraged.</li> </ul>	<i>Adaptive Reuse</i>
Article 20:	Recording and documentation	
	<ul style="list-style-type: none"> <li>• Any recording and documentation of NSTMH should be placed in a permanent archive and made publicly available and accessible.</li> <li>• Establish a proper centralise system of recording and documentation management system, through digital database for dissemination and sharing.</li> </ul>	Should be consistent with Article 10
Article 21:	Awareness, education and training	
	<ul style="list-style-type: none"> <li>• Promote community awareness, education and training, especially among <i>house owners</i>, and <i>appreciation</i> of the skills of heritage tradesmen through public events such as workshop demonstrations and open days at <i>conservation</i> project sites.</li> <li>• Develop a holistic approach through educational and vocational training programmes and courses focusing on building conservation of the NSTMH.</li> <li>• Encouraging schools to form ‘Heritage Clubs’ at a young age (primary and secondary) to foster understanding of the rich cultural, social framework of the <i>Adat Perpatih</i> and the tangible part of the community.</li> </ul>	
Article 22:	Engaging the house owner	
	<ul style="list-style-type: none"> <li>• It is important to begin with engaging the <i>house owner</i> directly by building their understanding of the processes involved. Exposure to a good example of conservation approach (pilot project) in the <i>kampung</i> area will help the house owner more understand.</li> </ul>	Should be consistent with Article 23
Article 23:	<i>Kampung</i> Homestay Programme	
	<ul style="list-style-type: none"> <li>• The uniqueness of the NSTMH could be promoted by setting up and coordinating an “Organised <i>Kampung</i> Homestay” scheme which offer a different experiences.</li> <li>• Using their houses as tourist attractions (e.g. with an organised <i>kampung</i> homestay programme) also has the potential to generate income for them while preserving their house.</li> </ul>	Should be consistent with Article 22

Words in italics are defined in Article 1.

## Summary of the FINAL NSTMH-CPF

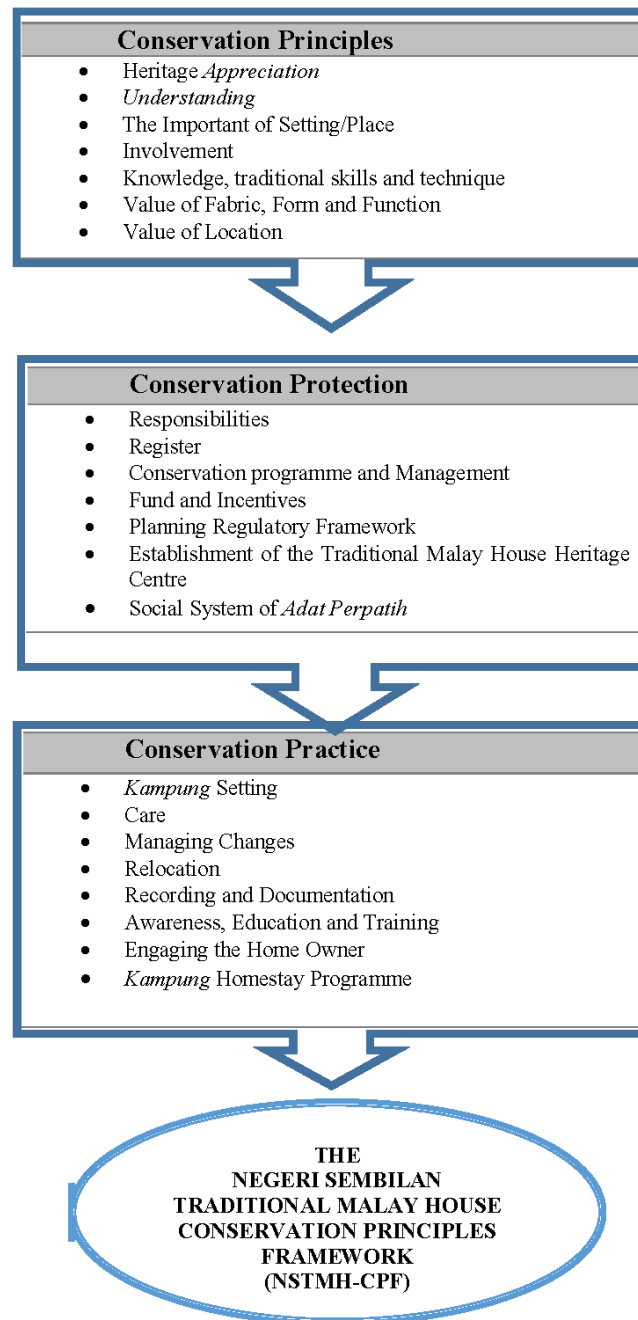


Figure 9.2: The final NSTMH-CPF

### **9.3 Chapter Summary**

This chapter has presented essential validation through the seeking and integrating of expert review, requiring the addition, elimination and expansion of elements.

Experts provided many suggestions and ideas but it was only possible for certain points to be considered for enhancement of the framework. All comments from the experts in every section were discussed by adopting and adapting them concurrent with the aim of the research – to establish a ‘Negeri Sembilan Traditional Malay House Conservation Principles Framework’ (NSTMH-CPF).

The next chapter will recapitulate the research purpose and findings, discuss problems arising from the research that was undertaken and limitations to the research. The conclusion derived from the research also highlights the contributions, critical reviews of the framework and suggests possible recommendations and potential applications.. There is also an autobiographical reflection to conclude.



## **CHAPTER 10**

### **CONCLUSION**

There was considerable variation when the challenges in the conservation of the NSTMH were explored through the house owners and conservation experts' interviews, on-site observations and documents review. The main findings of the research objectives managed to strategically address and represent the effective methods that can be used to achieve the research aims, i.e. to establish a conservation principles framework for the NSTMH. A form of triangulation of these multi-method approaches was the key element to best answer the research question. This chapter concludes by revisiting the research process and the limitation of carrying out the study, and highlighting the contribution of this research and recommendations for future projects. A self-reflection to the overall research process is also made.

#### **10.1 Revisiting the Research Process**

The centre of discussion was aimed to generate an understanding of the challenges in the conservation of the NSTMH through the house owners and experts' perception, which indirectly involved an investigation of the changing patterns of the form, fabric and function. Reviewing the existing local and national heritage legislation as well as related international charters in conservation were carried out to explore in a broader context towards establishing a 'Conservation Principles Framework for the Negeri Sembilan Traditional Malay House' (NSTMH-CPF).

The review of the vernacular architecture of Malaysia and focus on the design concepts of the vernacular architecture of the Traditional Malay House (TMH) and that in Negeri Sembilan (NSTMH) in particular highlighted the significance of this architecture as the local importance and in Malaysian context that is worth to be preserved. The review of the current challenges in the conservation of the TMH has to include the changes made to the structures and the issue of managing change. The importance of this particular heritage was highlighted because it has unique

characteristics of environmental performance that well adapted to the tropical climate regarding its construction, materials and flexibility of internal layout and planning which reflects the value of cultural and social lifestyle of its owner and the Malays community of the *kampung*. The NSTMH also reflects other values such as its rarity of local distinctiveness. The unsympathetic changes that threatened its form, fabric and function were evidenced of the owners' neglecting to understand about the architectural and historical value of the house. The abandonment of the house could be avoided if everybody play their role from national level to the state, district and the *kampung*'s people themselves.

To achieve the Research Objective 3, it was important to get an overview of conservation of this particular architecture in the context of implementation and practice in Malaysia at national and local level. Deficiencies were found in the current practice of heritage legislation, identified as a shortage in the protection of this valuable tangible heritage, especially in the Negeri Sembilan context. Therefore, in order to get an overall picture from the broader perspective of an international context, the review was expanded to include broader and international relevant charters and conservation principles in vernacular architecture. In addition to this, and to fill the gap, there was a discussion of broader experiences drawn from successful case studies in other countries showing a broad alternative and approaches that could be explored and adapted to the Negeri Sembilan context such as the open air museum and adaptive reuse. The concept and techniques applied in a various range of possibilities that can be adapted to local context to save this heritage. This discussion included the relocation approach concept as an example worthy of consideration as a solution of last resort as explained in Section 3.4 and 8.2.

The research methodology was established in **Chapter 4** making clear the choice for a multi-methods approach that would be directly related to the subject as the best way to explore and gain evidences from the micro perspective of the house owners and their house as well as macro perspective of the experts and heritage documentation of local, national and international context, as well as mapping the conceptual framework of the study and the issue of trustworthiness. The multi-methods approach eventually consists of semi-structured interviews with house owners and experts, on-site observation of the selected NSTMHs and document reviews of the

selected heritage legislation and charters (local and international). An analysis flow of the research helped explain the challenges in the conservation of the NSTMH by adopting Miles and Huberman's matrix thematic and mapping the four elements in a robust manner (Table 3.2). The three different methods were analysed through thematic analysis (**Chapter 5**-interview), a model of cultural heritage analysis (**Chapter 6**-on-site observation) and King's template analysis (**Chapter 7**-document review). Later, all the data were triangulated with discussion on key findings before come out with initial framework (**Chapter 8**) with further validation from the experts towards establishing the final framework (**Chapter 9**).

## 10.2 Main Findings

The research effectively explored the house owners' views of the challenges they faced in the conservation of their houses, in addition to the views of the experts (**RO1**). On-site observations (**RO2**) revealed evidence of the unsympathetic changes to the form, fabric, and function as well as the issue of abandonment. There was also an investigation of the currently available heritage legislation in the local and national as well as international contexts in regards to vernacular architecture (**RO3**).

The ultimate goal is to establish a 'Conservation Principles Framework for the Negeri Sembilan Traditional Malay House'(**NSTMH-CPF**), which is intended to eventually be used by policy makers, local authorities, professionals or house owners as guidance to implementing conservation work in Malaysia (**RO4**). Before that, the framework was validated through a series of expert reviews (**RO5**) towards establishing the final **NSTMH-CPF** framework. It is important to organise this research according to the objectives which represent relevant methods and themes in this debate.

The triangulation method was used to generate an initial idea of the proposed framework which was then merged with the key findings, as discussed in Chapter 8. All the findings were directed to frame the overall concept of protecting and conserving the NSTMH. Obviously, there is abandonment of the vernacular architecture and specifically the NSTMH, although the on-site findings exposed the reasons why this issue remains both culturally and technically relevant. The house

owners accept what has been changed even though the sense of place has started to disappear from the *kampung* area.

Discussion within the literature regarding sustaining the vernacular architecture in the modern day can be accepted on the assumption that it will be successful if houses are converted to different uses to prolong the lives of the buildings. The adaptive reuse of buildings was widely accepted by scholars and respondents as one of the best approaches to be considered and adapted in terms of uses and functions.

Even the example of the OAM, as discussed in Chapter 2, was recognised as having successfully saved old buildings from demolition, with the houses relocated to a new site as a last resort. In doing this, the concept of the relocation approach is not only promoted but it also enhances the importance of decision-making to adapt it either to a new context or the way it was seen before. A mixed approach of relocating NSTMHs for a variety of reasons and adapting them to a new function seems appropriate in terms of being a step to ensuring sustainability.

### **Research Objective 1 (RO1):**

#### **Identifying the Challenges in the Conservation of the NSTMH from the Perspectives of House Owners and Experts.**

**RO1** identified the challenges in the conservation of the NSTMH from the perspectives of house owners and experts. Two main themes appeared in the house owner interviews; first, understanding and awareness; second, heritage appreciation. From the experts' interview, the themes were conservation challenges, experiences and approaches, the importance of heritage appreciation and legislation context. These themes were then triangulated with the findings from the on-site observation and document reviews before the initial framework was developed.

Significant participation by the house owner(s) is crucial to conserving the houses, especially with regard to their engagement in developing a greater understanding of the values and techniques needed to maintain the NSTMH. Their involvement is a primary principle as it recognises their indispensable bond with their houses and environment, a crucial aspect of vernacular architecture that is worth transmitting as part of the process of managing change. Without their strong



engagement, abandonment of the NSTMHs shows a gradual detachment from a traditional way of living and illustrates the loose bond between the house owners, the house and the land values (Sulaiman and Theodossopoulos, 2014). Besides that, current needs have forced them to accept changes which compromise the appreciation of their own heritage.

A greater understanding of the buildings and the changes made to them from the house owners' perspective was carried out towards educating them in conserving heritage for the future in a meaningful way (Pearson and Meeson, 2001). Furthermore, the research asserted by communicating that understanding, the house owners and the public could have '*better and more integrated appreciation of what the heritage is and its value to the society*' (p. 10), something which goes beyond the sole aspect of management.

A NSTMH represents family pride through inter-generational history and is also a record. In the *Adat Perpatih* system, the *rumah pusaka* (inherited family house) is passed down to the female siblings, but the extended family should be encouraged to assist in the upkeep of the house as a "family base" and prevent it from being abandoned. Based on the findings, only a great awareness of heritage education would help to reduce this gap, and this is vital and should be a priority regarding conserving the NSTMH. All ages should be involved in heritage education, but especially the heirs to the houses and the young generations. Proper education and great understanding in the heritage of the NSTMH will help to increase awareness and appreciation that leads to the right action and wise decision-making to protect them from further damage, especially with regard to managing changes in the form, fabric and function.

As challenges to the conservation of the NSTMHs derive from many sources, the interviews with the experts showed they believe that the way to overcome them is through a holistic approach. The findings of this study build in particular on the literature reviewed in **Chapter 2** and **3** as discussed in **Chapter 5**, which indirectly answered the first research question.

## **Research Objective 2 (RO2):**

### **Examining the Changing Pattern of the Form, Fabric and Function of the NSTMH**

**Chapter 6** looked at the changing patterns of an NSTMH as they evolved from the original design and affected its conservation. The notion of a changing pattern springs from Matero's (2006) model of cultural heritage that links the significance of form to the fabric and function. The surveys represent the changes that are constantly happening and they were triangulated with the interviews with the house owners and experts.

As was often seen, relocation is an apparently extreme approach but is considered quite established in Malaysia, nevertheless as the case of *Rumah Tukang Kahar* and *Rumah Maimunah Yaakub* projects showed that it must be well monitored and managed to avoid any misplacing of essential elements due to a lack of proper recording and traditional skills. Scott (2014) asserted that in such cases all architectural and structural elements of the house should be '*painstakingly uniquely referenced, position recorded and catalogued for (i) reinstatement and (ii) provide a history of the house alterations for the future*' (p. 15) but unfortunately it does not happen always.

Guidance, charters and correct practice highlight that the NSTMHs should be conserved in their original locations within their *kampungs* in all circumstances. This refers primarily to the group and associative cultural values of each building, which make a crucial contribution to their cultural significance and which should not be considered in isolation.

Surveys and interviews confirmed also that the integration of modern living standards into traditional life sometimes hits boundaries that need to be addressed and resolved with an extra-cautious approach to accommodate current needs within the structure's character. Good practice shows this should avoid distorting the form and fabric of an NSTMH through conjecture about the original, and change is undesirable where it reduces its values.

As a consequence, broad options should be explored and strategies adopted to mitigate the impact of changes, promoting minimal and balanced interventions that recognise the diversity of the changes that occurred in the lifespan of a NSTMH and prioritising its values. Compensation strategies as highlighted by Matero (2006) should be developed to balance the three basic constructs of cultural materials (form, fabric, function). The focus should be more on changes made to the three main typologies of the NSTMH (*Serambi*, *Rumah Ibu* and *Rumah Dapur*) which lead to misunderstanding and misinterpretation of the character, not only among the house owners and their heirs but also among the public and future generations. Again, the loss, weathering, and compensation of those three concepts of form, fabric and function should be balanced and considered in conserving this local heritage.

The research showed that every intervention will require a different solution and level of replacement, all of which can affect the significance and values of the architecture's integrity. Minimal disturbance to the fabric that leads to the change of its form and function could be considered appropriately in its context. Unsympathetic changes of the NSTMH's form and fabric reflect that a '*sense of place*' was overlooked in favour of '*placelessness*' towards its abandonment. The worst-case scenario was that many past changes had been ignored and not recognised by the house owners as part of the evolution of the house, without any feelings of doubt on their part. However, the changes would be recognised as important only when the original idea of the NSTMH characteristics is understood and respected. This was made even worse when nobody was concerned about their effect on the character of the whole architectural integrity.

Proper understanding and the correct perceptions from the house owners of the significance of the value of the NSTMHs will determine the future state of the houses regardless of any potential conservation and/or transformation.

**Research Objective 3 (RO3):**

**Investigating the Existing Conservation Principles regarding Traditional Timber Houses, the Malaysian and International Context.**

**RO3** aimed to investigate the existing conservation legislation relating to the NSTMH or broadly TMH, but also vernacular architecture in general. Key parameters were identified and analysed in the relevant heritage legislation and charter documents (local, national and international), as discussed in **Chapter 7**. None of the local and national heritage legislation protects the NSTMH in particular and TMH in general, highlighting the broader lack of protection of this kind of Malay vernacular architecture. The Melaka Preservation and Conservation of Cultural Heritage Enactment of (1988) (**L1**) and the State of Penang Heritage Bill (2011)(**L5**) were the closest references found to the local context to guide the development of the proposed framework. Within the international context, the Burra Charter (2013) was found to be fundamental for the development of the conservation principles framework. By having proper protection especially in recording and documenting through database could help to safeguard of its survival for present and future generation.

#### **Research Objective 4 (RO4):**

##### **Establishing a Conservation Principles Framework for the Negeri Sembilan Traditional Malay House (NSTMH-CPF)**

To establish the **NSTMH-CPF**, all the findings from the interviews (**RO1-Chapter 5**) and surveys of the changing patterns (**RO2-Chapter 6**) were framed with the data that interconnected with the heritage legislation and charters documents (**RO3-Chapter 7**) as discussed in **Chapter 8**. 23 key parameters emerged from **RO1**, **RO2** and **RO3** which were then triangulated to fit the four main categories (Introduction, Conservation Principles, Conservation Protection and Conservation Practice) (Figure 8.15).

#### **Research Objective 5 (RO5):**

##### **Validation of the Conservation Principles Framework for the Negeri Sembilan Traditional Malay House (NSTMH-CPF)**

The research saw it crucial to validate the initial **NSTMH-CPF** through experts' reviews towards the final **NSTMH-CPF**. These experts were an established professionals that were selected based on their work in developing, running and implementing conservation management plans in any historic environment context,

locally and internationally. Overall, most of the experts gave their full support and agreed that this extensive research was necessary for the NSTMH and the framework makes a great contribution to the conservation of the traditional Malay houses. It was crucial then for the validations and final framework to be placed in a format ready for use as guidance in practice (Figure 9.2).

Although '*conservation provides a continuation in the identity building of a nation*' (Sulaiman and Theodossopoulos, 2014, p. 409), what I found was that the real meanings of the overall findings exposed the real situation and dilemmas facing the state of conservation of the NSTMH, which is currently threatened by societal lifestyle changes in the *kampung* area. Nobody realised the possibility that the house owners might actually drive the conservation of the NSTMH in a dynamic, flexible and intelligent way if only they knew how to deal with it (Sulaiman and Theodossopoulos, 2014).

This lack of awareness is why many NSTMHs have been abandoned, without a sense of place and belonging, not only from the house owners' side but also beyond their surrounding environment. A 'weak sense of place' or 'placelessness' became apparent from the exploration of conservation issues of the NSTMH and is something worth pondering in order to protect them from falling into dereliction. Having said that, Bullen and Love (2011) also highlighted that sustainability of local communities much depends on the sense of place and value they place in their local community and its identity. However, with fast adoption of modern techniques and sudden rupture with traditional principles, led to a loss of identity of people and places (Martin et. al., 2014).

I firmly believe that this heritage has to be preserved but I am now in a position to more fully appreciate all of the difficulties in the field that this thesis confirmed. The exploration of house owners' understanding of the challenges in the conservation of the NSTMH, supported by the experts' views and evidence from the on-site observations, proved that there are various reasons why most of the houses have been abandoned. Moreover, there has thus far been no form of regulation or special framework or guidelines created to maintain and conserve the historic timber Malay

house, or about the broader historic environment, particularly in Negeri Sembilan, even within the National Heritage Act 2005. In addition, there is a lack of documentation and reference books for the broad public to confirm the importance of this heritage as explained in Section 4.3.3 and 5.5.1, even though it has enriched Malaysia's cultures and customs through the uniqueness of the *Adat Perpatih* social system and a reflection of the local vernacular cultures.

A critical review on the final framework and its potential application are further discussed below towards the overall conclusion

### **10.3 Critical Review of the Framework**

The proposed framework derived from the data emerged from the findings of the fieldwork and literature that were later integrated in order to establish the conservation principles framework for the NSTMH. The proposed framework was intended to protect, control and monitor the conservation work on the NSTMH and also act as guidance through a holistic management approach, as explained below.

Highlighting the importance of heritage could become an advantage for the country if its society is knowledgeable, passionate, patient, respectful, appreciative and loving towards the heritage that exists in its fatherland, as mentioned in Section 8.2 (Articles 2, 3, 4 and 5). The heritage appreciation (Article 2), understanding (Article 3) and involvement (Article 5) of house owners are essential to protect the NSTMHs from being abandoned. The house owner(s) have an active role in the protection of the NSTMH with an understanding and knowledge of heritage, being entirely responsible for dealing with the conservation of the house. Without full engagement from the house owners, the buildings will be lost and there will be a wider gap in the basic knowledge of heritage. Not only that, the involvement of house owners (Article 5) is also dependent on their understanding of the skills and traditional techniques (Article 6) applied in the construction of the house. With inadequate understanding, problems will remain and further challenges will be added to conserving, repairing and maintaining the house. The significance of the NSTMH and its setting should be fully understood because it is an integral part of its environment. A clear understanding of

the cultural value of the NSTMH will help house owners to meet their current needs in an acceptable way. To achieve the best outcome of any conservation approach, a full understanding of the principles of the NSTMH should be the main priority as it is about identifying the intangible values that attach to them and their physical significance (form and fabric).

As noted before, there are not many joiners or *Tukang* left, and the lack of traditional skills is a fundamental problem. Such skills and technique are essential to conserve the specific structure and care of the setting. The skills need to be retained, recorded and passed on to new generations.

A basic understanding of NSTMH typology, both physically and culturally, could help them to value the house appropriately and to act wisely before any changes are made to the form, fabric and function of the house, including its location, as stated in Article 8. The important value of its place (Article 4), form, fabric and function (Article 7) can only be appreciated if principles such as those mentioned earlier in related articles are followed.

The setting and the layout of the *kampung* is determined by the social relationships that include the culture and lifestyle of the villagers and their traditional activities, and makes sense as part of the *kampung*. Each *kampung* should protect their setting by conserving the traditional characters with as little change as possible to the original form, fabric and function of the NSTMHs. For those NSTMHs that have suffered damage in relation to their form, fabric and function, any approaches taken should maintain the integrity of their historic and aesthetic values. Changes should also be based on proper studies and assessments and should be addressed according to the relevant condition of the house and the needs of the house owner(s). A great deal of value can be found in listing at least one *kampung* this way to ensure the preservation of the entirety.

Furthermore, principles such as those stated above could help to minimise the demolition or abandonment of the houses. For instance, nowadays, there are many TMHs that continue to exist in the *kampung* area, in a variety of conditions and facing different issues, throughout Malaysia. They are often threatened, as in the case of the

demolition of *Kampung Pokok Asam* and *Kampung Tengah*, Jelutong, Penang and *Kampung Baru*, Kuala Lumpur due to a lack of sensitivity among the local society (house owners) and state government that forced the pursuit of modern development and transformed aspects of life, especially in the city centre. One way of safeguarding the TMHs is to protect them as heritage *kampung*, as practised by PERZIM, Melaka, under heritage legislation that is able to protect them from being destroyed, thus conserving the TMH as an individual entity that is worth considering in the context of the entire *kampung* as they share similar characteristics, places, settings and contexts.

Besides highlighting the involvement and important role of *Ketua Kampung*, consideration should also be given to the hierarchical level in the social system of *Adat Perpatih*, which involves *Undang (Luak)*, *Dato' Lembaga (Suku)* and *Buapak (Perut)* in line with the *Ketua Kampung*. Their presence is still relevant in all parts of Negeri Sembilan for the intangible heritage of community activities as well as the physically tangible part (the building fabric), especially amongst elderly men with knowledge of the historical relationship.

An understanding of the basic principles and importance of the NSTMH from all aspects, along with a form of protection for the purpose of control and guidance, will help to protect the value of the NSTMH before it disappears. From the findings, the protection of heritage regardless of its importance or national or local significance may be balanced not only by a focus on the national significance but also by giving some weight to the local heritage, such as in the case of the NSTMH.

A motivation to protect this heritage will be generated if everyone understands and plays their roles and responsibilities (Article 9) regardless of their status and designation, whether it be government or private, individuals or groups/organisations, *Ketua Kampung*, local authorities or house owners. Strategic planning and actions in this context are important to identify the potential action that needs to be taken, whether this has to start from the bottom and move up, or be in the form of top-down approach, depending on the situation. This could come via, for example, the introduction of training in traditional skills and techniques, or specialist training, for professionals or house owners through a proper course conducted by the Department



of Skills Development, National Occupational Skill Standard (NOSS), Malaysia. A collaborative approach to education, awareness and training between relevant parties – specialist contractors, *tukang*, conservators, architects, authorities, etc. – is essential, especially with regard to financial aid and resources. It should include not only the building's significance, but at the same time seek to conserve the effort, skills and education of the original builders (Bullen and Love, 2010). As highlighted by Martin et al. (2014), the local development of vernacular heritage has the potential to stimulate local economies, professional training in traditional techniques and action on conservation.

Although some protection has been legalised through legal documentation, as discussed in Chapter 7 and Chapter 8 (section 8.2.3), in this framework the sole purpose is to ensure that any alteration, repair or demolition that may affect NSTMHs of special interest is controlled through proper planning and guidance. It is only about the formation of an inventory database for sharing and dissemination so that it can be updated for future reference, as mentioned in Section 8.2, Article 10. Besides that, research has shown that certain aspects are in need of improvement, such as material procurement. The categorisation of listed houses through a ratings system is another potential way to motivate and inspire house owners to improve the status of their houses, as discussed in Article 10.

For instance, a particular rating system for all NSTMHs, including its surrounding conditions, e.g. ratings of Excellent (A), Good/Moderate (B) and Weak/Critical (C). This may make *house owners* motivated to aspire to an 'A' house status and get recognition or even certain benefits, and those with Critical status to have an intervention to improve the condition, with repair funds under stipulated terms, etc. Funding could have further conditions attached to it, such as the requirement to open the house for tourists to experience it.

Among other things, I was also witness to the issue of people's mentality in Negeri Sembilan, in that there is a lot of potential and a lot of information available but this is not well shared among the key agencies, and I am not sure whether this is a problem of mentality or a technical problem. A holistic and critical approach is needed

alongside the dynamic interrelation of social, political and economic aspects within the particular cultural and historical context that is influenced by people and the way it has been practised (Vellinga, 2013).

Towards the end, there should be critical engagement involved in the relationship, not only between vernacular architecture (the NSTMH), the culture (*Adat Perpatih* and lifestyle) (Article 15) and the environment (site and setting of the individual house and *kampung*) (Article 16) but also involving the engagement of house owners (Article 22) too. It is about how we are able to learn from the past and improve it in both the present and for the future of the NSTMH built heritage environment.

Ideally, managing this heritage should be well integrated and understood in dynamic ways. The bottom line concerns not only maintenance but also more overarching problems, like convincing and supporting the house owners to properly maintain and care for their houses. With proper guidance, support and incentives, house owners could do their best to care for the buildings, carry out repairs (Article 17) and manage changes (Article 18), including how to encourage architectural unity and integrity as a whole. Any actions and coordination in the form of a top-down approach (federal to state to district to *kampung* level to the house owners) or otherwise could be well managed if everyone were to play their respective roles to achieve an ideal goal of preserving this heritage. With great cooperation from local authorities, professionals, house owners and *kampungs*, people could make a meaningful contribution as part of a holistic approach to improving conservation of the NSTMH.

Any conservation programme and management (Article 11), or a proper conservation management plan that covers each aspect of protecting the NSTMH, its principles, protection and practices, as mentioned in the proposed framework (section 8.2), could be successfully implemented if it is monitored in a holistic and integrated way. Provided all of the planning regulations are taken into consideration at an early stage, this would help to minimise risks in the implementation of conservation works.

The proposed funding and incentives for maintaining and repairing the house constitute a bonus for the house owner if the house is listed in the register (Article 10).

Any form of tax relief for house owners is quite common nowadays in developed countries. In other words, funding and support from the government will ensure the survival of the NSTMH and its conservation state.

Moreover, the suggestion of having an NSTMH Conservation Centre, as mentioned in section 8.2, Article 14 could be a stepping stone towards highlighting the importance of this particular heritage, but would only be successful if it had the full support of the state government. Either a top-down or bottom-up approach would be appropriate as long as the aims, visions and missions were united towards protecting and conserving this unique heritage from fading into history within its original fatherland. Planning, conserving, maintaining, monitoring, funding, training, educating, recording and documenting are all part and parcel of the sharing and dissemination of information as an educational resource for people locally, nationally and internationally. Vernacular architecture is about domestic, indigenous and local traditions, and is essentially the architecture of the people that demonstrates a unique culture and social system, and, as such, a deeper understanding of its associated uses and functions should not be ignored in today's modern contemporary lifestyle. According to Alsayyad and Arboledo (2011), 'indigenous vernacular dwellings are sustainable because they make appropriate use of local resources to ensure climate comfort at low cost, through the production of structures that are easily adaptable to changing conditions in a socially cohesive way' (p. 140).

It might not be relevant for some people to learn about, adopt and adapt its meanings into their daily lifestyle but they would be better appreciated if people were more sensitive through, for example, changes made to the original form, fabric and functions of the NSTMH with minimal disturbance (Article 7). The NSTMHs maintain their relevance to this day, no matter how many people tend to ignore them. We should learn from history as it might be beneficial not only to ourselves but also to our heirs and future generations. Whether this appreciation involves a relocation (Article 19), such as to an open air museum (OAM), or adaptation (Chapter 2) of the form to other functions such as a resort, it has to be tackled in the most appropriate way in order to prolong the survival of the house in a sustainable way, as mentioned in sections 3.3 and 3.4. Although the OAM has its own challenges of globalisation (Williams, 2007),

adaptive reuse at least offers a more effective process of dealing with buildings than demolition (Bullen and Love, 2011), with the added benefit of regenerating an area in a sustainable manner (Bullen and Love, 2010). Finding a balance between cultural significance and economic viability sometimes creates major challenges in the adaptation of historic buildings (Yung et al., 2012). Consideration must also be given to what does not work, the mistakes made by current builders and what could and should be done to avoid those same mistakes from being repeated.

There is little interest in local heritage, so there should be an emphasis on greater awareness (Article 21) and promotion, especially among house owners and their heirs. Aside from this, encouragement at an early age in primary school could potentially introduce children to basic knowledge of the historical, cultural and built heritage environment. With proper recording and documentation (Article 20), anyone should be able to make close reference to study or conduct further research on the aspects of built heritage conservation. For instance, establish a proper system of recording and documentation management, to include dissemination and sharing. A homestay programme (Article 23) is also part of the research findings (Ramele et al., 2013) that have exposed the reality of activities that attract tourists to experience the local environment and lifestyle by using the house owners' houses as tourist attractions (e.g. with an organised *kampung* homestay programme) also has the potential to generate income for them while preserving their house.

In another context, the Little House Improvement Scheme (LHIS) is an approach from abroad that incorporates an innovative method with the potential to be adopted and adapted to the local context in order to save the NSTMH from abandonment. This scheme has been successfully practised in Scotland since the 1930s to conserve and regenerate domestic buildings on a smaller scale. The scheme has evolved and been improved to suit current needs. Without this, all of the area's historic houses dating from the 16<sup>th</sup> to 18<sup>th</sup> centuries would not have survived in the context of 20<sup>th</sup>-century contemporary society and development.

According to Bullen and Love (2010), a sustainable historic environment should reflect local life and maintain local identity, diversity and vitality. Having said

that, the conservation of heritage buildings provides significant economic, cultural, social (Bullen and Love, 2010) and environmental benefits (Yung et al., 2012).

The holistic approach to heritage management, including the management of change, could create a greater sense of belonging or sense of place, which could then prioritise the significance of this local vernacular architecture in any development issues. The exploration of ideas would lead to appropriate and sensitive reflection towards conserving the NSTMH. Grenville (2001) asserted that *'the understanding of how a building stands up and combats the climatic conditions is crucial to an overall comprehension'* (p. 17). A greater holistic understanding of the importance of these houses, from either a management point of view or from the perspective of the individual house owners themselves, will determine the success of their protection and conservation states. Henderson (2012) also asserted that with careful management of change by the owners, and even professionals, it is essential to ensure that the significance of a place is protected and understood by present and future generations. In the end, most people, myself included, agree with Grenville's statement that *'what people do and what they say can be very different and understanding motives often depends upon understanding that disjunction'* (Grenville, 2001, p. 26).

We all, however, have different perceptions of the conservation of vernacular architecture, perhaps due to our different backgrounds and cultures, meaning that people tend to see the world differently. According to Alsayyad (1989), this is obvious, for example, 'as academics we speak a different language from and live in different places than the people we study' (p. 528). He also suggested that any findings must remain open regardless of our discipline (e.g. architect, planner, archaeologist, historian, etc.). Indeed, the 'classification of environment such as traditional and modern, rural and urban, potentially give attention to the many inconsistencies'. Furthermore, Alsayyad (1989) also agreed that considering our responsibility as 'people committed to educating ourselves and explaining to the people who live in traditional environments why we value what they have', is more than enough. This is 'often something that the difficulties of day-to-day subsistence living may have caused them to forget' (p. 530) and thus become abandoned.

That is why the issue of conserving vernacular architecture in the context of the modern world is still being debated. But this does not mean we cannot move it, to ensure that the existence of vernacular architecture remains relevant for the benefit of people in both the present and the future.

The proposed framework could be applied and adapted into various forms of action according to industry players, academics and even house owners. As one outcome of the research, the tool could be used to help manage protection of the built heritage environment in Negeri Sembilan. Its applications are relevant and suitable to implementing conservation works for TMH in Malaysia as they share similar characteristics, especially those built on stilts and made from timber. Further explanation, recommendations and potential applications can be found in Section 10.6.

Overall, the research process has ultimately determined a feasible working method for conservation, from identifying a gap and the related issues, conducting a pilot study, collecting and analysing data, to developing and validating a framework using suitable methods and methodology. The framework has been tested with specialists and is now written in the language of academic work. This thesis could be referred to by anybody seeking to undertake academic work for further research.

#### **10.4 Research Limitations**

It is important to frame this research journey within the following limitations to demonstrate its applicability:

- Some of the data collection could not be conducted on site due to limitations of time in observing the houses. Inevitably, surveys and especially interviews depend on access and people's goodwill. So, data was conditioned by the level and amount of access I was able to obtain, occasionally denied or limited. Longer times would have been required to gain people's trust and convince them to provide more data. However, some of the data needed were gathered through email later on, specifically observations of the relocation approach

which helped with the analysis and made discussion of the findings more thorough.

- There are only limited sources of literature relevant to the scope of this research, i.e. conserving the NSTMH in particular and the TMH in general; there was instead significant primary observation as mentioned in Section 6.4 undertaken of the changes in form, fabric and function and a comparison study of all relevant heritage legislation documents in Malaysia (Section 7.2.1). Therefore, the integration of these relevant aspects in this work made a tremendous positive contribution to the current literature context and body of knowledge.
- The validating process was added at a later stage (October 2015) and proved quite challenging. It required more time to complete, primarily in obtaining the input of the selected experts. Even though it was quite risky to expose the framework to outsiders before the research was concluded, this was important as it increased the reliability and credibility of the research from both a micro and macro perspective.

## **10.5 Contribution of the Study**

The value of this research lies in the development of a conservation framework for the NSTMH, a concept that does not exist in Malaysia in general for all TMH's. The information-rich data obtained from the house owners, experts, on-site observation and heritage documentation has been combined to map the framework. Therefore, the NSTMH-CPF was established through the reflection of all the findings and discussion of the data. The contributions of the research may be summarised as follows:

- It could be a starting point for the Negeri Sembilan state government to set up guidance for the built heritage environment.
- Within the context of the theoretical spectrum, the main findings of this study that have been established into an NSTMH-CPF add to the current body of knowledge of building conservation in Malaysia.
- It is worth mentioning that most of the existing literature on vernacular architecture discusses the importance of preserving it according to the needs of today and within an international context. But there is limited discussion about

the importance of vernacular timber architecture generally in Malaysia and of its conservation. Therefore, it is hoped that the outcome of this research might trigger initiatives to bridge the gap between theory and practice in this area.

- In the context of a practical contribution, since the NSTMH-CPF has been established based on the root of the problem on the ground (through the experience of house owners, conservation experts and heritage legislation), it could be used as a guideline in the broader conservation of vernacular Malay architecture.
- This holistic approach covers various disciplines, not only for professionals and the house owners but also the administrative management at local level (Negeri Sembilan State Government) and national level, wherever applicable. As the NSTMH has a similar context to other types of TMH throughout Malaysia, this framework could be used as a broad model and tool to help in the conservation of TMHs particular to each state.

## **10.6 Recommendations and Potential Applications**

This research has established a ‘Conservation Principles Framework for the NSTMH’. This framework will be successful if it is well executed in addition to the current level of protection at either national, state, local, district or *kampung* level. All the parameters, from the conservation principles to practice, were integrated to a more comprehensive, informative and extensive framework. Guidance includes the implementation of the conservation works, the various roles and responsibilities of the stakeholders involved, including house owners, professionals or even government.

This understanding of the challenges in the conservation of the NSTMH from the perspectives of both house owners and experts has identified a niche in the form of needs to be emphasised, and fits with the need for a holistic approach. It is suggested that there is a need for more support to be provided by the government with regard to budgetary constraints. Additionally, the implications of the proposed framework are inclusive of all users and benefits. The interweaving factors as presented in the findings may also benefit the new strategy of relocating or adapting to the new functions. The



findings of this research have identified shortcomings in many areas, not only from the house owners' perspective but also in the whole context of the built heritage environment in Negeri Sembilan, including professional and government agencies. Although various limitations had already been noted, further areas have also been identified as having the potential for future research and action, as explained below.

#### **10.6.1 Future research:**

Possible areas for further investigation could include:

- Conservation of the fabric of a TMH, particularly techniques for specific architectural and structural elements in relation to the form, fabric and function in other settings and contexts of vernacular architecture.
- A full exploration of the future of traditional skills towards safeguarding the indigenous techniques of the traditional Malay architecture.
- Enhancing current heritage legislation in Malaysia, both locally and nationally, towards a comprehensive built heritage environment through the management of local heritage (from federal, state, district level), especially in the context of local authorities.
- Exploration of the importance of sense of place of the TMH in the *kampung* setting and in the context of 'placelessness' to promote community participation in both micro and macro aspects.

#### **10.6.2 Future action/policy:**

- This conservation principles framework can be used by the local authorities in Negeri Sembilan particularly and in Malaysia generally as a guidance to conserve the TMH.
- To gather a dedicated conservation team that will be responsible for the monitoring, maintenance, recording and documenting of the NSTMH.
- To develop inventories of all TMH in local areas for the purpose of its safeguarding and protection, as well as for the future reference.

- A collaboration between the state, federal government and educational institutions to include training in traditional skills such as traditional skills to students, builders and the public.
- This framework could also be part of educational and implementation tools for a central heritage agency like the National Heritage Department Malaysia, to protect and conserve vernacular timber Malay architecture in Malaysia.
- To identify supporting partners that will be able to assist with the financial aspects such as funding for training or urgent conservation projects.
- To raise awareness among owners of historic buildings in regard with the importance of building fabric and its preventive maintenance.
- Collaboration between members of the community and the local authority to share knowledge and insights through an in-situ programme that will ensure the continuation of heritage and traditional practices.

## **10.7 Self-Reflection**

Understanding the nature of the research process has been an invaluable learning experience while undertaking this research study. I have learned and gained an understanding of how research can be frustrating, tedious, messy, sometimes rewarding and even exhilarating. It is like a cyclical wheel; sometimes you will be at the top and at other times at the bottom. Most of the time, the path is not like a highway because many problems arise during the process prior to your safe arrival at the final destination (i.e. thesis completed and successful viva). Without continuous guidance and advice from supervisors, the path will be a very long journey and the researcher will at times become lost without direction.

This study has also provided some key ideas that have helped me examine my decision-making during the process, at the right time and the right place. I also began to question and discuss the research issues (sharing knowledge) with my colleagues and also the level of attention and value we obtained from the discussion. It has also given me a broader perspective of the challenging patterns of conserving the traditional

Malay house, particularly in the Negeri Sembilan area. I also now have a growing awareness of how people perceive this vernacular house, from the perspectives of both the house owners and experts, and even in the context of heritage legislation. It should involve many stakeholders playing their respective roles in actively respecting, protecting, maintaining and conserving this unique vernacular architecture of the NSTMH.

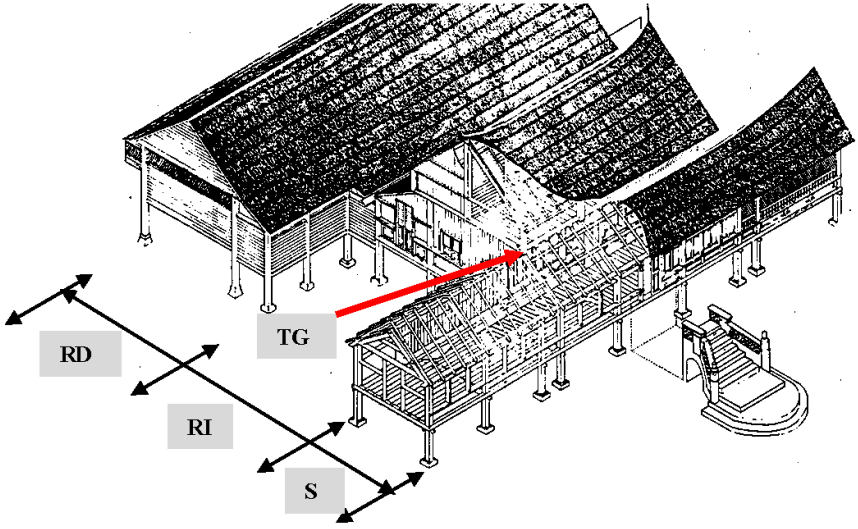
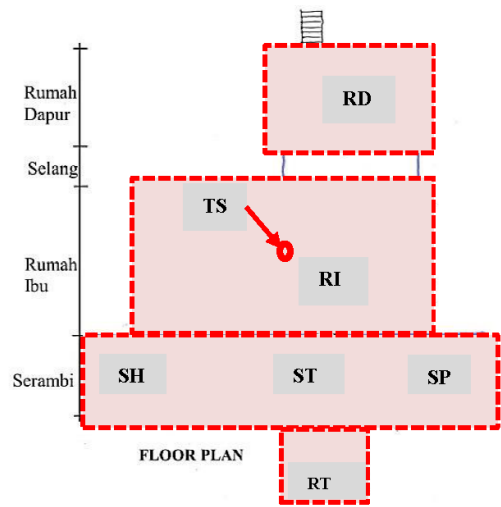

There has been criticism made by the respondents in this study of the challenges in the conservation of the NSTMH, including the changing pattern of form, fabric as well as function, and the lack of protection of such vernacular Malay architecture in the current heritage legislation, both locally and nationally. There has also been an overview of the international charters/principles that explored the possible connection between macro and micro perspectives of protection and implementation that can be adopted and adapted where relevant to inspire and be applied to the local context and needs. The strongest themes and parameters in the final framework sound valuable, well integrated and incorporate most of the essential ingredients identified from other successful approaches, and which could be highlighted, used, implemented and executed in the future.

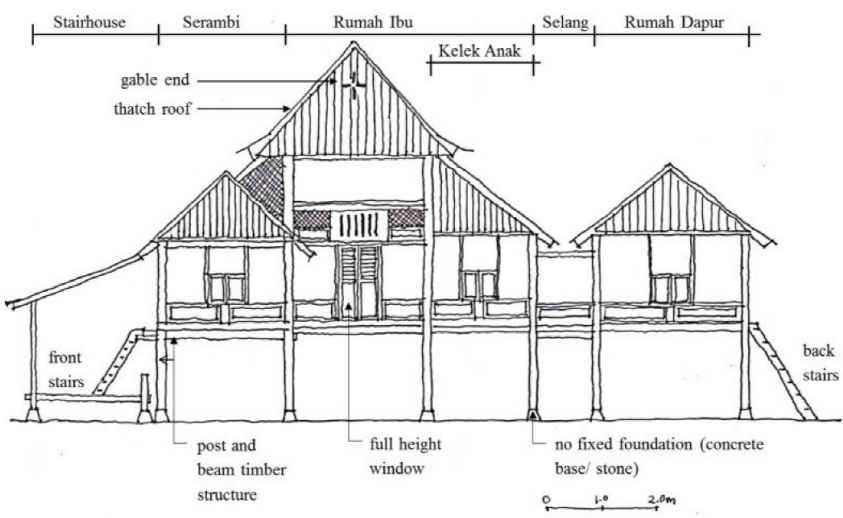
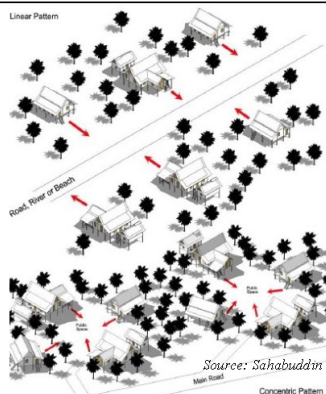
My personal view is that this fundamentally optimistic picture leaves the NSTMH-CPF as a fruitful ground for further study. Although it relates more specifically to the NSTMH, it can also be applied to other TMHs as well.

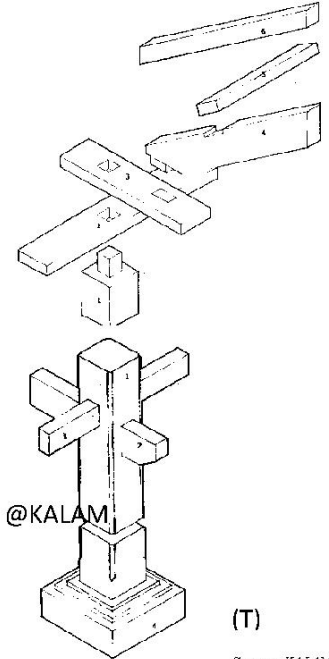

Everyone has to open up their minds to deal with this issue, not only the house owners and the conservation experts. Whether it is a top-bottom or bottom-up approach that is best suited to any individual case, it should be looked upon as a 'new' way of tackling the problem of conserving this particular heritage. Both the owners and the authorities should understand the articulation of what it is about each building or the vernacular architecture of the NSTMH that makes it culturally significant when making any decisions in terms of its challenges and changes. If everything is put in place (system of advice, technical support, financial and fiscal incentives, monitoring, maintenance and management), then it might be appropriate to provide solutions and

guidance for the holistic conservation management of the built heritage environment in Negeri Sembilan.




## GLOSSARY

Terms	Images
Isometric of the NSTMH (example)	 <p style="text-align: right;"><i>Source: KALAM (2014)</i></p>
Typical layout plan (example)	 <p style="text-align: right;"><i>Source: Author (2014)</i></p>
Section (example)	 <p style="text-align: right;"><i>Source: Sulaiman (2015)</i></p>

Elevation (example)	 <p>Source: Author (2014)</p>
<i>Adat Perpatih:</i>	A customary law wholly related to a democratic matrilineal social system applicable in Negeri Sembilan only.
<i>Buapak (Perut)</i>	Originate from the word <i>ibu</i> (mother) and <i>bapak</i> (father); a leader of group ( <i>suku</i> ) appointed by members of his clan ( <i>suku</i> ).
<i>Dato' Lembaga (Suku)</i>	A leader of the <i>suku</i> (clan), above the <i>Buapak</i> .
<i>Kampung:</i>	<p>A typical village incorporating a loose agglomeration of traditional Malay houses (private). It is a reflection of the cultural and social structure of the Malay people. Distinctive characteristics: house and its compounds, coconut and fruit trees, cultural activities (engage in collective efforts or mutual assistance (<i>gotong-royong</i>)), <i>Surau</i> (a small-scale mosque), paddy field, rubber estate, etc. In this context, we refer to a Traditional <i>Kampung</i>.</p>  <p>Source: Sahabuddin (2012)</p>
<i>Ketua Kampung</i>	Headman (Head of the village).
<i>Lembaga Muzium Negeri Sembilan</i>	Negeri Sembilan Museum Board; a body that handles the maintenance, preservation, retention and documentation of the historical and cultural treasures of Negeri Sembilan.
<i>Negeri Sembilan Traditional Malay House (NSTMH)</i>	A long-roofed type of traditional Malay house with a curved roof at both ends.
<i>Rumah Dapur (RD)</i>	A kitchen block at the back of the house.
<i>Rumah Ibu (RI)</i>	The main core of the house ('Mother of the house'). The first block to be built (between <i>Serambi</i> and <i>Rumah Dapur</i> ), the largest area with highest floor level (to signify its social hierarchy), including private area for family members. Sometimes has <i>Loteng</i> (an Attic)
<i>Rumah Tangga (RT)</i>	A porch built over the house's main staircase.
<i>Serambi (S)</i>	Also called <i>verandah</i> , a space with low headroom before entering <i>Rumah Ibu</i> . The first space to entertain guests (male).
<i>Serambi Hujung (SH)</i>	The right-end space of <i>Serambi</i> when entering the main door. A space to entertain chieftains and religious people.
<i>Serambi Pangkal (SP)</i>	The left-end space of <i>Serambi</i> when entering the main door. A space to entertain people.

<p><i>Serambi Tengah</i> <b>(ST)</b></p>	<p>The middle space of <i>Serambi</i>, often the original <i>Serambi</i>.</p>	
<p><i>Tanggap System</i> <b>(T)</b></p>	<p>One of the main joining methods applied in a traditional Malay house, connecting two or more timber components to form the main structure (column &amp; beam, column, beam &amp; rafter) without the use of nails.</p>	 <p>Source: KALAM (2014)</p>
<p><i>Tiang Gantung</i> <b>(TG)</b></p>	<p>A suspended column supporting the roof structure and <i>loteng</i>. Can be seen in the <i>Serambi</i> area. Sometimes crafted with different beautiful motives and colours to convey the high status of the owner.</p> <div> </div> <p>Source: Author (2014)</p>	
		 <p>Source: Author (2014)</p>



<i>Tiang Seri (TS)</i>	<p>Main post (central) of the first columns to be erected. Crafted with beautiful motives, patterns and colours that differ from those on other columns.</p>  <p><small>Source: Author (2014)</small></p>	 <p><small>Source: Author (2014)</small></p>
<i>Tukang:</i>	A skilled craftsman and carpenter, a specialist in work carried out by hand and traditional details.	
<i>Undang (Luak)</i>	A ruling chief within the <i>Adat Perpatih</i> social system.	
<i>Usung Rumah</i>	The practice of moving a house from one location to another using villagers' manpower and the spirit of togetherness.	 <p><small><a href="http://www.langkawiartbiennale.com/2014/event/angkatrumah">http://www.langkawiartbiennale.com/2014/event/angkatrumah</a> (Accessed: 13 April 2016)</small></p>



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## **APPENDICES**

Appendix A	:	Approval Letter to Conduct Pilot Study (2013)
Appendix B	:	Approval Letter Conduct Real Fieldwork (2014)
Appendix C	:	Supporting Letter for Validation
Appendix D	:	INITIAL Framework (NSTMH-CPF)
Appendix E	:	Publications



## Appendix A : Approval Letter to Conduct Pilot Study (2013)



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To whom it may concern

Edinburgh, 16 October 2013

Dear Sir/ Madam,

**Mohd Sabere Sulaiman, PhD Candidate in Architecture, University of Edinburgh**

With this letter I would like to confirm that Mr. Sulaiman is a candidate for a PhD in Architecture at the University of Edinburgh. He is working under my supervision on the subject of the building owners' awareness of the changes and threats that affect the conservation of traditional Malay houses, with reference to the Negeri Sembilan area.

Sabere is going to be in Malaysia in October and November 2013 to carry out surveys of traditional houses in the Negeri Sembilan area and talk to officers, academics and architects regarding the conservation of this heritage. I would appreciate every help you could provide to Sabere and every access to the buildings he is planning to survey.

Sabere is a very trustworthy person, as also a hardworking and systematic student, so I am sure he will make the most of his contact with you and will treat with respect and confidentiality the domestic environments he will visit. Please do not hesitate to get in touch with me for any further inquiries.

Yours sincerely,

**Dr. Dimitris Theodossopoulos**  
**Lecturer in Architectural Technology**  
PhD (Edinburgh), SpecArchCons (Rome Sapienza), DipCivEng (Patras)





## Appendix B : Approval Letter Conduct Real Fieldwork (2014)



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To whom it may concern

Edinburgh, 26 May 2014

Dear Sir/ Madam,

**Mohd Sabere Sulaiman, PhD Candidate in Architecture, University of Edinburgh**

With this letter I would like to confirm that Mr. Sulaiman is a candidate for a PhD in Architecture at the University of Edinburgh. He is working under my supervision on the subject of the building owners' awareness of the changes and threats that affect the conservation of traditional Malay houses, with reference to the Negeri Sembilan area.

Sabere is going to be in Malaysia from June till August 2014 to carry out surveys of traditional houses in the Negeri Sembilan area, to interview their owners and to talk to officers, academics and architects regarding the conservation of this heritage. I would appreciate every help you could provide to Sabere and every access to the buildings he is planning to survey.

Sabere is a very trustworthy person, as also a hardworking and systematic student, so I am sure he will make the most of his contact with you and will treat with respect and confidentiality the domestic environments he will visit. Please do not hesitate to get in touch with me for any further inquiries.

Yours sincerely,

**Dr. Dimitris Theodossopoulos**  
**Lecturer in Architectural Technology**  
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## Appendix C : Supporting Letter for Validation



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To whom it may concern

Edinburgh, 12 October 2015

Dear Sir/ Madam,

**Mohd Sabere Sulaiman, PhD project: validation of conservation principles framework**

As Mr. Sulaiman's supervisor, I would appreciate you help in commenting upon the conservation principles framework attached in this letter. Sabere has done an extensive review of the main problems that affect the preservation of traditional Malay houses in the state of Negeri Sembilan and the theoretical and legislative context, so he produced this valuable framework that may guide conservation of this heritage in a sustainable way.

This framework needs to be validated by professionals working on the field so that its provisions make sense in practical and administrative terms, beyond the academic research that produced it. Sabere thought of contacting you because of your experience in the study and preservation of this typology or your role in the management of sites of heritage interest. We would welcome any comments you may have on this framework draft, at any level or section of it you may feel like or according to the time you can spend. It is very important for this work and we appreciate your time and engagement.

Please do not hesitate to get in touch with us about any further clarifications.

Yours sincerely,

**Dr. Dimitris Theodossopoulos**  
Lecturer in Architectural Technology and Conservation  
PhD (Edinburgh), SpecArchCons (Rome Sapienza), DipCivEng (Patras)

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registered in Scotland, with registration number  
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## Appendix D : INITIAL Framework (NSTMH-CPF

## Appendix D : INITIAL Framework (NSTMH-CPF)

*The Negeri Sembilan Traditional Malay House Conservation Principle Framework (NSTMH-CPF) - INITIAL*

### The Negeri Sembilan Traditional Malay House Conservation Principles Framework (NSTMH-CPF)

#### P r e a m b l e

The Negeri Sembilan TMH is the unique cultural heritage that represent one of the most significant traditional architectures in Malaysia due to its dominant and unique form of a curved roof at both ends. It also reflects the matrilineal social system of *Adat Perpatih* that is still preserved and practised.

The survival of this vernacular architecture is threatened due to the rapid modernization, urbanization, socio-economic transformation, loss of characteristic due to changes and development as well as serious issues of abandonment and obsolescence.

Many of the Negeri Sembilan TMHs, some more than 100 years, are not protected. Very few have been conserved as heritage as compared to other colonial building types. Only five out of 300 over buildings were gazetted as National Heritage or Heritage in Malaysia.

Considering all relevant local heritage Acts and International Charters or Principles that were related to the conservation of the traditional Malay house in particular, it is necessary to establish a Negeri Sembilan Traditional Malay House Conservation Principles framework (NSTMH-CPF) for the care and protection of this specific vernacular heritage.

This framework provides guidance for the conservation and management of the Negeri Sembilan TMH as places of cultural significance, but might also be applied to other types of TMH in Malaysia as they share similar characteristics such as stilts, raised floor, pitched roof and use of local timber material.

#### Why do we need to conserve?

The TMH is a vernacular architecture of an inspirational sense of place and connection to the cultural landscape especially its community in the *kampung* setting. A sense of place of the cultural significance of *Adat Perpatih*, which has its essential characteristics and expression of Negeri Sembilan local identity and experience. A product and the historical record of past generations that has formed us and reflect who we are and the Malaysian landscape.

These houses are an irreplaceable heritage that should be conserved and protected. They represent a high achievement by local people in environmental friendly house design.

#### The Negeri Sembilan TMH is recognised by:

- Main typologies: *Serambi* (*Serambi Pangkal*, *Serambi Tengah*, *Serambi Hujung*), *Rumah Ibu* (with *Loteng*-Attic) and *Rumah Dapur*.
- Good quality *Chengal* (Penak) timber.
- Expression of local, regional and traditional character that is responsive to the environment especially its curved roof at both ends with coherence style-regional identity of Negeri Sembilan.
- Traditional expertise of a *Tukang*. This house is a product of a skilful individual.
- An effective response to the social system (*Adat Perpatih*), the religious system, the very specific environmental constraints (tropical climate, wet and hot).
- Response to available materials surrounding (palm leaves, *Chengal* timber, etc.)
- Effective applications of traditional construction (*langgam* system and built without nails) and Sophisticated Prefabricated Extension System
- Time capsule (coin), as an evidence of the date of birth of the house when first erected, concealed under the *Tiang Seri* (main central column).
- Two specific shapes of the column; *tiang pecah lapan* (octagon shape) or *tiang pecah empat* (square shape). The decorative column and *tiang pecah lapan* represent the high status of the owners.

According to:

The Charter on the Built Vernacular Heritage (1999):

*"It would be unworthy of the heritage of man if care were not taken to conserve these traditional harmonies which constitute the core of man's own existence" (pg. 27)*

*Prepared by Mohd Sabere Sulaiman, 05 October 2015*

*The Negeri Sembilan Traditional Malay House Conservation Principle Framework (NSTMH-CPF) - INITIAL*

The Burma Charter (2013):

*"Places of cultural significance must be conserved for present and future generations in accordance with the principle of inter-generational equity" (pg.1)*

This issues are of global reference, as the vernacular structures all around the world are facing serious problems of dilapidation and are extremely vulnerable. (Built Vernacular Heritage, 1999).

#### Who is the NSTMH-CPF for?

This framework is a guidance for those involved in the conservation of the NSTMH including homeowners, experts, officials (Negeri Sembilan State Government, Authorities (Local Authorities, Negeri Sembilan Town and Country Planning

Department, District and Land Office,) Negeri Sembilan Museum, Village Security & Development Committee (JKKK), academics and students.



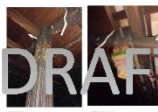



#### How to use this NSTMH-CPF?

It is a self-contained document and should be read as a whole.

#### Where does this NSTMH-CPF apply to?

The area of application particularly is the Negeri Sembilan Traditional Malay House, but it also might be implemented to other TMHs in Malaysia. Additionally, when gazetting a NSTMH as heritage building, it should comply with the requirements of the National Heritage Act 2005.

*Prepared by Mohd Sabere Sulaiman, 05 October 2015*

Articles	Explanatory Notes/ Images
<p><b>Article 1: Interpretation / Definitions</b></p> <p><i>Negeri Sembilan Traditional Malay House (NSTMH):</i> A long-roofed type of traditional Malay house with a roof curved at both ends. Its typology is quite specific and the definition of the key spaces follows</p>  <p><i>Serambi:</i> Also called <i>verandah</i>, a low headroom space before entering <i>Rumah Ibu</i>. The first space to entertain guest (male).</p> <p><i>Serambi Pangkal:</i> The end left space of <i>Serambi</i> when entering the main door. A space to entertain people. <b>(SP)</b></p> <p><i>Serambi Hujung:</i> The right end space of <i>Serambi</i> when entering the main door. A space to entertain chieftains and religious people. <b>(SH)</b></p> <p><i>Serambi Tengah:</i> The middle space of <i>Serambi</i>, often the original <i>Serambi</i>. <b>(ST)</b></p> <p><i>Rumah Ibu:</i> The main core of the house ("Mother of the house"). First block to be built (between <i>Serambi</i> and <i>Rumah Dapur</i>), the largest area with highest floor level (to signify its social hierarchy), incl. private area for family members. Sometimes has <i>Loteng</i> (an Attic) <b>(RI)</b></p> <p><i>Rumah Dapur:</i> A kitchen block at the back of the house <b>(RD)</b></p> <p><i>Rumah Tangga:</i> A porch built over a house's main staircase. <b>(RT)</b></p> <p><i>Tiang Seri:</i> Main post (central) of the first columns to be erected. Generally crafted with beautiful motives, patterns and colours which differ from other columns. <b>(TS)</b></p> <p><i>Tiang Gantung:</i> Suspended column supporting roof structure and <i>loteng</i>. Can be seen in <i>Serambi</i> area. Sometimes crafted with different beautiful motives and colours to show the high status of the owner. <b>(TG)</b></p> <p><i>Tangga System:</i> One of the main joining methods applied in traditional Malay house, connecting two or more timber components to form the main structure (column &amp; beam, column, beam &amp; rafter) without nail.</p> <p><i>Tukang:</i> Craftsman carpenter. A skilful person with specialism in hand work and traditional details.</p> <p><i>Kampung:</i> A typical village incorporating a loose agglomeration of the traditional Malay houses (private). It's a reflection of cultural and social structure of the Malay's people. Distinctive characteristics: house and its compounds, coconut and fruit trees, cultural activities (engage in collective efforts or mutual assistance (<i>gotong-royong</i>)).</p>	    

*Surau* (small scale of the Mosque), paddy field, rubber estate and etc. In this context, is about Traditional *Kampung*.

*Form:* The shape, configuration, physical appearance, character, size, scale and proportions of a NSTMH.

*Fabric:* All physical material of a NSTMH including components, finishes, fixtures, contents, colours, textures and objects.

*Cultural Heritage Significance:* "Cultural heritage having aesthetic, archaeological, architectural, cultural, historical, scientific, social, spiritual, linguistic or technological value". (refer to *National Heritage Act, 2005, pg. 101.*)

*Cultural Value:* The value of the NSTMH that exhibits relationship with *Adat Perpatih* through its social lifestyle and status, religious, planning and layout, form, fabric and function as well as techniques and materials used in their construction.

*Change:* The natural or man-made process, that are affects the continuity of a historic building and its environment. It happens in various ways and make different to the original form, fabric and function such as in demolition, in new uses, in adaptation, in alteration, in modification or even musealization that has been adapted to meet various needs.

See also Article 18

*Setting:* The content and context of the past, current and surrounding environment of a place that contributes to its cultural significance and values.

*'Using Rumah':* The practice of transferring the house using manpower of the villager with the spirit of togetherness.

*Maintenance:* The continuous protective care and prevention (regular maintenance) planned for a building and its context.

*Homeowner:* Owner of the NSTMH. Registered owner or the holder by the customary tenure of the land. Inhabitants are categorised into:

- Homeowner, who lives in,
- Caretakers who live in,
- Homeowner does not live in, but Caretaker look after,
- Homeowner who not lives in and house abandoned.

*Experts:* Professional Architect, Conservator, Academic.

*Officials:* Government officer (conservation agencies), local and planning authorities.

*Local Authority:* Shall have the same meaning assigned to it by the Town and Country Planning Act, 1976 (Act 172)-"Any city council, municipal council, municipality, district council, town council, town board, local council, rural board or other similar authority established by or under written law" (refer to *Town and Country Planning Act, 1976 (Act 172), pg.11*)

*Local Planning Authority:* Shall have the same meaning assigned to it by the Town and Country Planning Act, 1976 (Act 172)-Section 5 "In relation to an area, any land or building, means the local planning authority, as so construed, for the area in which the land and building

is situated.” (refer to Town and Country Planning Act, 1976 (Act 172), pg.11)

**Lembaga Muzium Negeri Sembilan:** Negeri Sembilan Museum Board; a body that handles maintaining, preserving, keeping and documenting the historical and cultural treasures of Negeri Sembilan.

**Register:** Any NSTMH (more than 100 years old) is proposed to be recorded into a register established and maintained under the NSTMH Heritage Centre or Lembaga Muzium Negeri Sembilan.

**Ketua Kampung :** Headman (Head of the village).

**Adat Perpatih:** A customary law and wholly relates to democratic matrilineal social system which applicable in Negeri Sembilan only.

**Conservation Management Plan:** A plan for conservation prepared under section 46, National Heritage Act, 2005.

**Conservation:** All the approaches and processes to retain the cultural significance of a historical asset. It includes maintenance, preservation, restoration, reconstruction, rehabilitation, adaptation or any combination and also management of change.

**Relocation:** A form of reconstruction, moving a building to a new place, but the context and its setting is lost. It involves dismantling and reassembling process.

**Adaptation/Conversion:** Change the original use to accommodate a new use (internal layout and fabric). The integrity of a new function to the original fabric and form should be considered appropriate to enable its continuation and its usefulness especially in sustainable ways.

**Restoration:** Recovering or returning the form or element (structurally or aesthetically) in its original state by replacing the existing elements with the missing original one. It may involves full restoration or partial restoration or with any combination of other conservation approaches.

**Reconstruction:** Re-creation or reproducing or returning a vanished structure to a known earlier state with the introduction of new material and construction, based on sound evidence. It is a reinterpretation of the past.

**Preservation:** Maintaining a building in its existing state and to retard from further deterioration or state of dilapidation with undertaking proper maintenance where necessary.

**Open Air Museum:** A place to exhibit collections of multiple old buildings including re-creation in landscape setting of the past. It often includes living history as it is driven by communities to maintain a particular traditional life style.

See also Article 20, under musealization approach.

## Conservation Principles

### Article 2: Heritage appreciation

- NSTMH, built more than 100 years, should be conserved.

- All these cases should be safeguarded and not left abandoned or in a risky state.
- The NSTMH is a local built vernacular heritage and integral part of the cultural landscape in Negeri Sembilan, which in turn is unimaginable without the *cultural heritage significance* of this landmark.
- The *homeowners* should play their role actively to protect the NSTMH with understanding and knowledge in heritage, being full responsible for dealing with the *conservation* of the house.
- NSTMH should be preserved on the site and part of the *kampung*, as it is meaningful to its context and environment.
- The NSTMH has various important values not only architectural, cultural and historical ones but also the rarity of local distinctiveness that act as an educational tool especially when it attached to the *conservation* process itself. A lot can be learnt from them.
- The NSTMH belongs to its beautiful *setting* of the *kampung* environment. Although, it was erected flexible as a pre-fabricated system, without nails and built on stilt, once they start to move it from their original site whether to adapt or restore it in another region, the *setting* is gone. But, if the house was transferred by '*usung rumah*' within the same *kampung* environment, it is still can be acceptable.
- To safeguard the NSTMH, *conversion* to a new use probably is a final decision. The flexibility of relocating the house to somewhere else is unique and only happens to the NSTMH. There is an option for *relocations* but it appropriateness should be very strictly considered especially to avoid restriction to its flexibilities that were already designed.

### Article 3: Understanding

- Understanding is an essential step in approaching any *conservation* works including NSTMH. To achieve the best outcome of any *conservation* approach, the great understanding of the NSTMH should be the main priority as it is about identifying the values and their significance, in view of *preservation of fabric and form*. To manage or care the NSTMH, a basic understanding of its principles, its nature and how it is changing should be determine in the first place. These includes:
  - Raised floor
  - Hierarchy of floor level
  - Breathable wall and full height window
  - Steep roof and wide roof eaves
  - Internal open space (multipurpose function)
  - Tanggam* system, prefabricated building and modular system
  - Embellishment (colours, patterns, positions and functions)
  - Natural building materials and colour
  - Green compound (landscape and coconut trees)
  - Tiang Seri and Rumah Ibu*
- Understanding is a continuous process and should evolve through time that will helps inform decision-making about its management.



<ul style="list-style-type: none"> <li>The decision of present understanding might be different from understanding of next generation.</li> <li>The significance of the NSTMH and its <i>setting</i> should be fully understood because it is integral part and result of its environment as a vernacular house. A clear understanding of the <i>cultural value</i> of the NSTMH will help them to meet their contemporary needs in acceptable way.</li> <li>By knowing what is important about the NSTMH will contribute to protect its special interest of how the traditional house were constructed, perform and maintain in the particular site.</li> <li>With poor understanding, the problems will still remain while added more challenges to conserve, repair and maintain the house.</li> <li>All parties (experts, homeowners, headmen, academics, authorities, contractors and etc.) involved in the conservation works of the NSTMH should work together and have mutual understanding of their role, to find a sustainable way to protect and preserve it.</li> <li>The techniques and management is needed and will follow naturally.</li> <li>Understanding the problem also enables to estimate the allocation budget for management of care from investigation to maintenance purposes (determination of methods and techniques).</li> <li>Vernacular architecture embraces not only the physical <i>form</i> and <i>fabric</i> but also the way in which they are used and understood (the traditions and the intangible heritage).</li> <li>The <i>homeowners</i> or <i>experts</i> should understand the NSTMH in detail in terms of design layout <i>setting</i> (internal and external), characteristics (<i>form, fabric</i> and function), scale and proportion and its context to the overall surrounding before making any decisions about its future.</li> <li>The lack of appreciation, understanding and awareness of heritage amongst the <i>homeowners</i> are the main challenges to protect the NSTMH. Their continuous involvement is important in all aspects include use and maintenance.</li> </ul>	
<p><b>Article 4: The importance of place</b></p> <ul style="list-style-type: none"> <li>The NSTMH is a vernacular structure and not a single building. They make sense and part of the <i>kampung</i>. Their link is more about social connection and the environment rather than the architectural urban connection or organization. The informal layout of <i>kampung</i> environment expressed by the villagers and its culture. The <i>setting</i> includes house compound, fruit trees (coconut, etc.) and traditional activities (<i>attap</i> or mat weaving). The layout of the <i>kampung</i> is determined by the social relationships that include cultural and lifestyle of the villagers. The house is normally in distance from one another for future expansion, tree planting and privacy.</li> <li>Each <i>kampung</i> should protect their built heritage environment by conserving the traditional characters with as little changes as</li> </ul>	Sense of Place (Conservation of the kampung)

<p>possible to the original <i>form, fabric</i> and function of the NSTMH. If the NSTMH that have suffered damage in term of <i>form, fabric</i> and function, any approaches if possible should maintain the whole integrity of the historical and aesthetical values of house characteristics. It also should be based on proper studies and assessments and should be solved according to relevant conditions of the house and the needs of the <i>homeowners</i>.</p> <ul style="list-style-type: none"> <li>The reversible approach should follow traditional means where necessary, technically and practically.</li> <li>When possible, avoid modifying the <i>fabric</i> in an irreversible way.</li> <li>If the modern approach is propose to replace the <i>Rumah Dapur</i> (major changes), it has to be done carefully in respecting the cultural, historical and aesthetical values of original design.</li> <li>Ideally, the reversible approach should be considered as a whole of the historic structure of the house.</li> <li>The <i>conservation</i> activities in <i>kampung</i> area should plan short and long-term implementation. The cooperation between <i>homeowners</i> and <i>Ketua Kampung</i> should be seen as an important, almost spiritual relationship to protect the <i>kampung</i> environment for present and future generation.</li> </ul>	<p>See also Article 17, 18 and 19.</p> <p>Should be consistent with Article 3, 6, 7, 13, 17, 18, 19 and 23.</p>
<p><b>Article 5: Involvement</b></p> <ul style="list-style-type: none"> <li>The strong participation by the <i>homeowners</i> is crucial to conserve the house especially their engagement with the values and techniques of maintaining the NSTMH. Their involvement is a major principle as it recognises their indispensable bond with their houses and environment, a key aspect of vernacular architecture that is worth transmitting.</li> <li><i>Homeowners</i> also have to know their role and to be proactive towards protecting the NSTMH. Any assistant should liaise directly to the right person in charge to get fund or repair the house.</li> <li>The role of <i>Ketua Kampung</i> should be underlined as he represents the <i>homeowners</i>. As a middle-man, he brings all the issues raised by the owners to the top level (State Government).</li> <li>If the house or the whole <i>kampung</i> were gazetted as the heritage, he should be expected to share the spirit of the National Heritage Act 2005 with the <i>homeowners</i>. The <i>homeowner</i> might be aware of <i>conservation</i> activities related not only to their houses but also to the whole <i>kampung</i>. He should also participate in the developing a <i>Conservation Management Plan</i> for his <i>kampung</i>.</li> <li>A formal application of fund for repairing or maintaining the NSTMH should liaise with him before being forwarded to the State Government.</li> </ul>	<p>Homeowner</p> <p>See also Article 9</p> <p><i>Ketua Kampung</i></p>
<p><b>Article 6: Traditional skills and technique</b></p> <ul style="list-style-type: none"> <li>The NSTMH need a good Architect or Conservator, but often a good <i>Tukang</i> is more than enough.</li> <li>Not many joiners or <i>Tukang</i> are left and the lack of traditional skills is a fundamental problem. Such skills are essential to repair</li> </ul>	

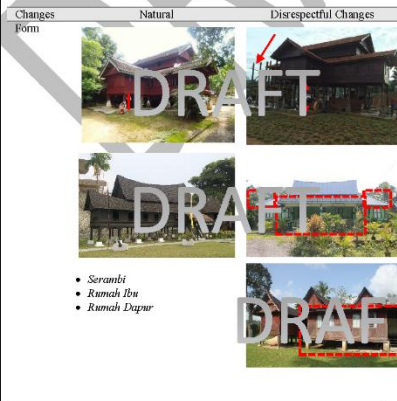
and conserve the specific structure. The skills need to be retained, recorded and passed on to new generations (through programs of vocational training for builders and *Tukang*).

- A person involved in *conservation* works of the NSTMH should be knowledgeable in traditional construction as well as skills, either by training or on-job experience. He also should know the suitable methods and techniques applied to repair and conserve the NSTMH, above all timber and roofing preservation.

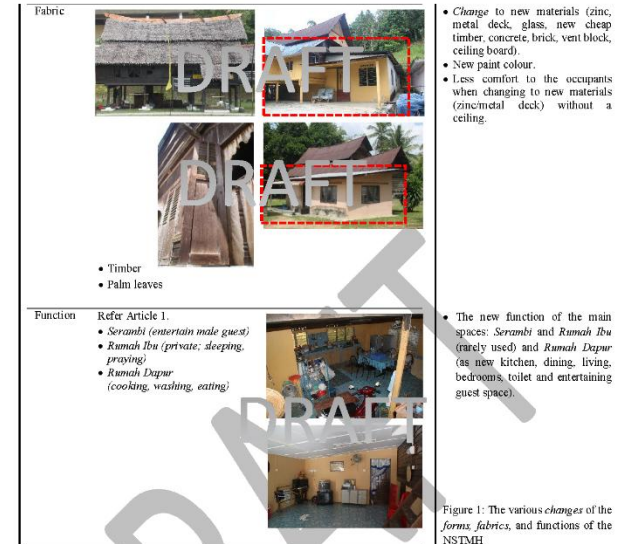
#### Article 7: Values of form, fabric and function

- Any *conservation* approaches to the NSTMH should respect their *cultural values* and their traditional character especially their *form*, *fabric* and *function*.
- There is often no respect to the *cultural values* and traditional character of the TMH when contemporary works take place (causing *irreversible changes* to the original *fabric*, *form* and *function*). (see *Figure 1*)
- An abandoned house is completely out of social and cultural context even for in-situ *changes* or move to somewhere else (*relocation*). (first row images (form)-*Figure 1*)
- The NSTMH is often going through transformations, which are often an integral part of its character that cannot be disregarded. During its lifetime, usually it *changes* this way as in *Figure 1* (natural as it should be-*left column*) and conversely, is disrespectful to the original fabric (*right column*). The natural one has to be respected and conserved because it is part of the history of the building, and the other one might be removed as they do not respect the *fabric*.
- It is important understand any historical *changes* because they are part of the character.

Changes



- The changing of *form* due to the lack of knowledge and understanding of special characteristics of the Negeri Sembilan TMHs heritage.
- Awareness and the role of the *homeowners* should be highlighted to minimise the unsuitable *changes*.



- Change to new materials (zinc, metal deck, glass, new cheap timber, concrete, brick, vent block, ceiling board).
- New paint colour.
- Less comfort to the occupants when changing to new materials (zinc/metal deck) without a ceiling.

- The new function of the main spaces: *Serambi* and *Rumah Ibu* (rarely used) and *Rumah Dapur* (as new kitchen, dining, living, bedrooms, toilet and entertaining guest space).

Figure 1: The various *changes* of the *forms*, *fabrics*, and functions of the NSTMH

From the survey done, there is a schematic evidence in four ways of the *changes* that have happened as in *Figure 2*.

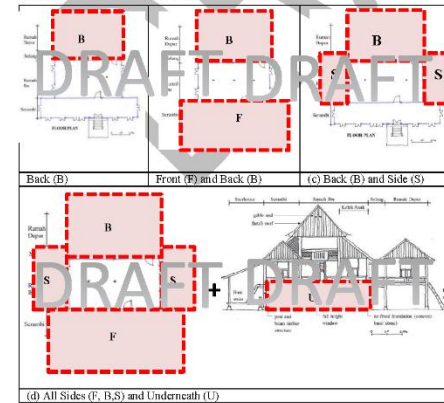


Figure 2: The schematic evidence in four ways of the *changes* of the NSTMH



#### Article 8: Value of location

- If possible, the NSTMH should remain in its historical location as the physical location is also part of its *cultural heritage significance*.
- It is good if the house was restored on their original site and in its *kampung*. The TMH was built with a philosophy and specific almost ritual erection procedures. From choosing the right site and location, to orientation, planning and layout (internal/external), circulation, multifunction of space, embellishment, traditional measurement or dimension on owners anthropometric and construction system. This consideration is much related closely to the religious and the local environment.

### Conservation Protection

#### Article 9: Responsibilities

- Encourage and promote engagement of traditional tradesmen to increase quality of technical input into the debate on heritage conservation practices.
- Engage with industry bodies and host joint events to increase networking between professionals and tradesmen within the heritage industry. Foster exchange of knowledge and cooperation.
- An assessment of the knowledge base of architects and conservators (their role of overseeing standard requirements on conservation projects (contractors and materials specifications)).
- Partner with educational institutions and Department of Skills Development, National Occupational Skills Standard (NOSS) in promoting specialist traditional trade courses.
- A Skill Action Plan (SAP) is a way forward document which involves many stakeholders (Authorities, National Heritage Department, Contractors, Heritage Organizations, Museums, Public and Private Training Provider and Career Service) to address this vital issue.
- SAP is a sustainable long-term solutions (5, 10 years or more) depending on the matter of urgency. The overall strategy of the SAP should cover several aspects such as:
  - a) Demand for NSTMH Craft Skills (Many approach taken by the *homeowners* mostly damage the original *form, fabric* and function of the house).
  - b) Should have enough supply of traditional skills especially to the Specialist Contractor, Architect, Conservator in TMH including training provision (Centre), funding and initiatives, use of traditional building materials, and career and educational college/institute.
- It is a key role of *Tukang* not only maintaining and conserving the NSTMH but start to reinstate of our attitude, mentality and planning action.

Experts

State Government/ Local Authority

- Funding should be made available to *homeowners* who carrying out repairs privately but if their house is more than 100 years old, homeowners are able to apply for a grant or funding from the Negeri Sembilan State Government, Federal Government, Museums if a Conservation Architect is appointed and involved in the project.
- Negeri Sembilan State Government or Federal Government (National Heritage Department) must recognise that traditional building skills and materials are a national requirement, accept its responsibility and provide relevant support (funding) for skills development.
- Immediate action is required to help minimise the deficit of skills where human capital and financial resources are the main factor that should be developed carefully.
- It is meaningful to maintain our NSTMH by careful repair through specialist skills and knowledge.
- Provide scholarship programs to attract young apprentices and incorporate them into contractors, esp. carpenters.
- Provide competitive job opportunities to qualified graduates from vocational degrees and reinforce the demand for specialist heritage tradesmen on conservation projects, especially NSTMH.
- Promote community awareness especially *homeowner* and appreciation of the skills of heritage tradesmen through public events such as workshop demonstrations, open days at conservation project sites.
- The curriculum of understanding, protection and conservation of vernacular architecture especially TMH and particularly Negeri Sembilan should be part of their main syllabus and give more weightage for undergraduate course in architecture. It should also be continued and enhanced to the postgraduate level of the conservation of vernacular architecture (TMH). Not on theoretical basis only but should involve practical activities such as dismantling and reassembling process as part of their conservation course.
- Establish an online directory specialisation to facilitate industry/public (including *homeowner*) access to resources.
- Host regular events targeting particular industries to facilitate networking (e.g. education sector, environmental sector, trade associations).
- Promote the museum's role in protecting the Negeri Sembilan TMH through lobbying to the government and collaborative projects with *experts*, education, industry and the local community.
- Host seminars and site tours of conservation projects that are in progress to foster mutual understanding and cooperation.
- Availability of manufacturers and suppliers of traditional building materials is a vital for proper conservation, repair and

Academic

Museum

Industry

<p><i>maintenance</i>. The practical use of the traditional materials and the material supply chain is crucial where various options should be made available with reasonable prices (range of specs and grade should be control and affordable for homeowners).</p> <ul style="list-style-type: none"> <li>• <i>Ketua Kampung</i> has important role in local coordination. Facilitate the people who doing the register and also make sure that <i>homeowners</i> are aware of successful projects has happened elsewhere in the <i>kampung</i> or in the district.</li> <li>• <i>Homeowners</i> should make themselves aware of the <i>conservation</i> of the NSTMH. As there is no statutory obligation upon the <i>homeowners</i> of historic NSTMH to keep their house in a good state of repair, as they supposedly in their interest to do so. With the existence of this <i>Register</i>, it should involve informal structure of checks and balance and moral obligation where they should do the right thing (do's and don'ts).</li> <li>• <i>Homeowners</i> should check for problems in the house and first assistance, they should contact the <i>Ketua Kampung</i>.</li> <li>• Once the new agency (Negeri Sembilan Traditional Malay House Heritage Centre) is establish, they should be the one who can consult and help the <i>homeowner</i> to understand the problem and help to choose the best solution (selection of materials, contractors, experts).</li> <li>• Encourage the <i>homeowners</i> to understand their direct responsibility to protect and make a decision about the future of the house by maintaining it properly themselves before getting assistance from others.</li> </ul>	<p><i>Ketua Kampung</i></p> <p><i>Homeowner</i></p>
<p><b>Article 10: Register</b></p> <ul style="list-style-type: none"> <li>• In the absence of a specialist office at local government, the Museum shall establish, maintain and monitor a <i>register</i> of the NSTMH. Appropriate resources must be made available (staffing, IT, public desk).</li> <li>• Establish an online directory for Negeri Sembilan TMH with a mapping system. This database is a tool for assessing problem and plan for the future.</li> <li>• The register shall be available, free and open for the public access. A fee might be charged for reproductions or certificates.</li> <li>• The purpose of <i>register</i> is to ensure any alteration, repair or demolition that may affect the NSTMH of special interest (more than 100 years old) is controlled.</li> <li>• It should also subject to planning application under Clause 70, Street, Drainage, and Building Act 1974 (Act 133).</li> <li>• The <i>register</i> of the NSTMH should be categorised according to its state conditions (A- Critical, B-Moderate, C-Minimal). The surveyor from the new agency (NSTMH Heritage Centre) should together in identifying the value of the house and they should also look at the <i>conservation</i> state and do make comment on that (report).</li> </ul>	<p>See Article 5</p> <p>Inventory (map, list &amp; description)</p> <p>Should be consistent with Article 21.</p>

<ul style="list-style-type: none"> <li>• Any development of registered NSTMH and its <i>setting</i> should preserve the original characteristic and appearance of any special interest (architectural or historical) in terms of layout, design, materials, siting, scale and proportion and its uses.</li> <li>• Application form should be made online by the <i>homeowners</i> or the group from the Centre, if the houses more than 100 years</li> <li>• All registered NSTMH shall be mapped with an online inventory system of database of NSTMH where should include view of the location of the houses on a map, for example, Ordinance Survey map and browse by <i>kampung's</i> name. The house details can be found with house name, house age, location, condition, brief description, category, date registered, district, state, postcode, coordinates and photos.</li> </ul>	
<p><b>Article 11: Conservation program and management</b></p> <ul style="list-style-type: none"> <li>• From time to time, the Centre/Museum/State Government shall formulate and publish proposal program for the <i>conservation</i> of the NSTMH as directed by State Government within its locality.</li> <li>• Any <i>homeowner</i> of a registered NSTMH can also submit a proposal to carry out <i>conservation</i> works, depending on the approval of the Centre/Museum/State Government.</li> <li>• The Centre should have a management framework of protection for the NSTMH.</li> </ul>	<p>See Article 13</p> <p>See Article 14</p>
<p><b>Article 12: Fund and incentive</b></p> <ul style="list-style-type: none"> <li>• The State Government shall establish a fund known as NSTMH Conservation Fund to support <i>maintenance</i> and <i>conservation</i>.</li> <li>• Any homeowner of a registered NSTMH may apply to the Museum through <i>Ketua Kampung</i> for financial assistance for <i>conservation</i>, <i>maintenance</i> and enhancement of their house and <i>kampung</i> area.</li> <li>• Any registered NSTMH may apply for tax relief to the State Government on the cost of the works.</li> <li>• Funding should be made available to <i>homeowners</i> who carrying out repairs privately but if their house is more than 100 years old, <i>homeowners</i> are only able to apply for a grant or funding from the Negeri Sembilan State Government, Federal Government, Museums if a Conservation Architect is appointed and involved in the project.</li> </ul>	
<p><b>Article 13: Planning regulatory framework</b></p> <ul style="list-style-type: none"> <li>• Without any consent in writing of the State Government or Local Authority or the Museum, no person shall be allowed to demolish, modify, repair, renovate, erect new structure, destroy trees, or excavate any part of a registered NSTMH as stipulated in Clause 70, Street, Drainage, and Building Act 1974 (Act 133).</li> <li>• The Government, State Government and responsible authorities MUST recognise the right of all communities particularly <i>homeowner</i> in <i>kampung</i> area to maintain their living traditions. Also, to protect these through all available legislative (national and</li> </ul>	

	<p>local), administrative and financial means (priority), especially to hand them down to future generations. Otherwise, NSTMH will be gone forever if no urgent action takes into consideration to protect them.</p> <ul style="list-style-type: none"> <li>Establish the need for appropriate local legislation on built heritage, with particular reference to NSTMH.</li> <li>Only specialist (conservation <i>experts</i>) registered under National Heritage Department should be appointed and every effort need to be made these people are available in any <i>conservation</i> projects of the NSTMH. The use of national register should be enforce or encourage.</li> <li>The Centre (Article 14), should have an enforcement framework of protection for the NSTMH.</li> <li>Being <i>register</i> does not mean it is listed. Once the Negeri Sembilan Heritage Act is established, the registered NSTMH (more than 100 years old) should be protected or listed at local level. Once listed, any <i>changes</i> made to the NSTMH will also be subjected to the requirements of the National Heritage Act 2005 including the enforcement.</li> </ul>
<b>Article 14: Establishment of the Negeri Sembilan Traditional Malay House Heritage Centre</b>	<ul style="list-style-type: none"> <li>The State Government or Museum shall establish the NSTMH Heritage Centre as a centralise body to control all aspects of NSTMH including conserving, maintaining, monitoring, funding, recording and documenting in order to safeguard the heritage for future generation.</li> <li>If the Centre is under Museum management as it already has the existing system, it will be easier. But if the existing system (Museum) is not functional as it suppose to be, then, either upgrading the existing system or propose/create new agency under the Negeri Sembilan State Government to implement.</li> <li>The Centre should have separate management plan for the <i>conservation</i> of NSTMH that consists of policy, enforcement, risk and its management.</li> <li>The Centre shall become an educational tool for all ages to learn about the NSTMH.</li> <li>The Centre shall also cooperate with other <i>Local Authority</i>, local Universities, Museums and <i>Experts</i> in traditional Malay architecture towards protecting the heritage.</li> <li>Training, education and awareness program may be part of this Centre's function. A short courses and workshops should be part of the training kits.</li> </ul>
<b>Article 15: Social system of <i>Adat Perpatih</i></b>	<ul style="list-style-type: none"> <li>Any conservation works of the NSTMH shall consider and retain the significant values of the social system of <i>Adat Perpatih</i> that already merged with the house layout and setting.</li> </ul>

See Article 22

<b>Conservation Practice</b>	
<b>Article 16: <i>Kampung</i> setting</b>	
<ul style="list-style-type: none"> <li>The layout of a <i>kampung</i> varies from one to another. It is therefore difficult to standardise planning at regional level.</li> <li>As houses are located quite apart from each other, with no clear boundary, the layout of a house includes a broader compound that should be conserved and maintained.</li> <li>The integrity of the siting and cultural landscape, physically are so important to be considered in any intervention to the TMH. It involves not only to the specific house but the whole <i>kampung</i>.</li> <li>Any fruit trees shall be maintained and avoid removing them unless it affects the <i>kampung</i> character and its setting.</li> </ul>	<p>Layout</p> <p>Landscape</p>
<b>Article 17: Care</b>	
<ul style="list-style-type: none"> <li>Maintaining the quality of proper and good <i>maintenance</i> of a NSTMH in a sustainable routine is important to ensure the continuation of its <i>form, fabric</i> and function.</li> <li>Regular <i>maintenance</i> is very important as it also supports the survival and expansion of traditional skills.</li> <li>The traditional pre-fabricated system in NSTMH depends on skills that should be retained, recorded and passed on to a new generation.</li> <li>The pre-fabricated system of historical extensions should also be well understood in its role to enhance the flexibility of the original design. Identifying it will help to minimise damaging the original <i>form, fabric</i> and function by avoiding misinterpretation.</li> <li>The aim to restore consistency of appearance, texture and form as in the original design has only stylistic value and disregards the lives of later generations, therefore a critical assessment must be made.</li> <li>Repristinating original forms or serving contemporary needs may also introduce unsuitable <i>changes</i> especially when using incompatible materials. Moreover, modern material such as bricks, concrete, zinc, metal decking, or even colourful paint create uncomfortable expression.</li> <li>It has to be well understood that extra knowledge is needed on how to deal with replacing the original materials by the <i>homeowners</i> themselves.</li> <li>The use of local hardwood is essential, especially aiming for the same strength, elasticity, durability, fire resistance, moisture content and density, if the same species is not available. For example, the use of heavy hardwood such as <i>Chengal, Merbau, Bitis</i>, etc. may not be suitable always. It is recognised that maintaining the original material is difficult if there is no source or skilful <i>Tukangs</i> available. The choice must be made also to reduce costs and effort on regular <i>maintenance</i> by the <i>homeowner</i>.</li> </ul>	<p>Monitoring and Maintenance</p> <p>Traditional Building System</p> <p>Replacement (removed fabric)</p>

<ul style="list-style-type: none"> <li>Replacement must respect the relevant historical and aesthetical values identified in the character appraisal of a TMH.</li> <li>The works should always be done by <i>Tukang</i> or skilled people, ideally specialised in NSTMH.</li> <li>If the <i>homeowners</i> cannot afford to buy the expensive timber (<i>Chengal</i>), treated timber is also encouraged to be used. For example, Treated <i>Kempas</i> (the cheapest medium heavy hardwood) to replace <i>Chengal</i>.</li> <li>The use of chemical preservatives should be carefully controlled and monitored. (science must demonstrate the benefit and that they do not affect public and environmental safety).</li> <li>Avoid using any brush coating as its only superficial.</li> <li>More effective solutions like pressure treatment should be promoted.</li> </ul>	Timber Treatments
<p><b>Article 18: Managing changes</b></p> <ul style="list-style-type: none"> <li><i>Any changes</i> should be reversible.</li> <li><i>Changes</i> may be necessary to incorporate new lifestyle within the significant cultural environment of the original <i>form, fabric</i> and function. It is undesirable where it reduce the values of it.</li> <li>Value can be reduced by addition, inappropriate material, abandonment, natural causes-decay, and by the loss of which devalue its <i>cultural heritage significance</i> affected from the changing of the original characters and appearance of its <i>form, fabric</i> and function.</li> <li>As it also relates to the social and economic issue, the sustainable management of <i>change</i> should make a balanced judgements based on its evidence, the new current needs of lifestyle as well as the availability of resources for its future sustainability.</li> <li>A balance decision-making in prioritising the values of the <i>changes</i> is by recognizing its diversity and needs with an appropriate intervention and management.</li> <li>Broad options should be explored and strategies adopted to mitigate the impact of <i>changes</i> by promoting minimal intervention.</li> <li><i>Changes</i> over time should be appreciated as important aspects of vernacular architecture when occurred harmoniously with the existing character without compromising its original characteristics but should be recognised it not all <i>changes</i> are worthy of conserving.</li> <li>Conformity of all parts of building to a single period, will not normally be the goal of work on vernacular architecture. It depends on the aims of a project. To return back to the original design sometimes, even if acceptable, sometimes is impossible unless all the historical documentation was available.</li> </ul>	

<ul style="list-style-type: none"> <li>Demolition of significant fabric is not acceptable, only minor demolition where circumstances of use require.</li> <li>If <i>adaptation</i> is a solution to saving a NSTMH from being abandoned, the essential <i>form</i> (character, structure), <i>fabric</i> and function should be defined so that the intervention demonstrates how to respect them.</li> <li>Disturbance of significant <i>fabric</i> should be avoided where necessary and be minimised as little as possible.</li> <li>Cautious approach of changing should take place to avoid distorting the <i>form</i> and <i>fabric</i> of a NSTMH by conjecture only. Proper research should be done before any decision for <i>changes</i>.</li> <li>The mixture of modern living into traditional life sometimes create boundaries that need to be resolved. The intersection of these lifestyles should take an extra cautious approach to comprehend the need of current use within the existing character.</li> </ul>	<p>Change of use</p> <p>Disturbance Fabric</p> <p>Cautious Approach</p>
<p><b>Article 19: New work and intervention</b></p> <ul style="list-style-type: none"> <li>Any new work should respect not only the <i>cultural heritage significance</i> of the original <i>form, fabric</i> and function but also the scale and proportion, character, siting, texture and colour of the present form, when they have minimal impact on the original physical conditions.</li> <li>New work should be sensitive to the historic character of the NSTMH in terms of design and construction while integrating with the original building materials.</li> </ul>	
<p><b>Article 20: Relocation</b></p> <ul style="list-style-type: none"> <li><i>Relocation</i> approach is a controversial issue and according to the Burra Charter (2013) Article 9 (9.1):  <i>"The physical location of a place is part of its cultural significance. A building, work or other element of a place should remain in its historical location. Relocation is generally unacceptable unless this is the sole practical means of ensuring its survival" (pg. 5).</i></li> <li>A NSTMH has a special characteristic as it was erected purposely to be dismantled and reassembled, using the <i>tanggam system</i> to construct it. Flexibility in terms of expansion and extension is the main advantage in the TMH. Many TMH have been relocated everywhere in Malaysia for various reasons (new functions as a resort, museum, gallery, guest house and etc.) and despite modifications or errors in re-assembly they have largely ensured their survival.</li> <li>A more meaningful trend for <i>relocation</i> probably should be towards an <i>Open Air Museum</i> approach depending on individual aims.</li> <li>Despite good intentions, the problems arise from how <i>relocation</i> has been implemented. The <i>changes</i> of the original <i>fabric</i> to suit current needs is the main issue here, and it should be controlled to minimise the disturbance through a reversible and cautious approach.</li> </ul>	

<ul style="list-style-type: none"> <li>When deciding to move a NSTMH to another place, the main steps to take are:               <ol style="list-style-type: none"> <li>fully document the house (layout plan-measured drawing, inventory of photos and its location monitoring <i>relocation</i> process day to day),</li> <li>find a suitable location to store the dismantled components,</li> <li>consider health &amp; safety measures (wear a safety helmet, boots, clothes, PPE) with suitable construction tools whether manually or machinery.</li> <li>all tagging should be well kept for future reference during the reassembling process.</li> </ol> </li> <li>A proper storage (covered, avoid expose to rain and strong heat) is essential. Timber could shrink and expand during the process (from the day it was dismantled until the day it is reassembled).</li> <li>A temporary roof should be erected before the dismantling work to avoid heavy rain or wet conditions.</li> </ul>	Dismantling Process
<ul style="list-style-type: none"> <li>Setting out plan should be ready for the erection of the NSTMH. All the record and documentation should be used to help minimise the misplacing the components.</li> <li>A temporary roof should be erected before the reassembling work to avoid heavy rain or wet conditions.</li> </ul>	Reassembling Process
<ul style="list-style-type: none"> <li>An <i>open air museums</i> or similar musealisation approach is often seen as safe ways to protect and exhibit old buildings. This approach could give a scientific and educational value to the NSTMH. Limited NSTMH have been properly conserved on site, but this approach seems to be the most established practice throughout the country. A successful similar experiences and cultures in other countries should be referred too. For examples:               <ol style="list-style-type: none"> <li>Keep the house in peaceful atmosphere (as original) by lit up the fire in the 'ironi' (sunken hearths) (Hida Folk Village, Japan)</li> <li>Layout arrangement according to their original location (The Nihon Minkaen, Japan)</li> <li>Public were able to experience the historical settings which display different regions, time period and social status</li> <li>Demonstrate live activities: traditional activities and tools, handicraft workshop.</li> <li>A place where the buildings were save from demolition,</li> <li>The amount of relocation of the historic vernacular buildings were ranged from 30 to 160 buildings.</li> <li>The world's oldest open-air museum is Skansen, Sweden (1891).</li> </ol> </li> </ul>	Musealization approach
<p><b>Article 21: Recording and documentation</b></p> <ul style="list-style-type: none"> <li>All research regarding NSTMH should be available and accessible to everyone. New research should be possible to be incorporated easily in this database.</li> <li>Establish a proper recording and documentation management including dissemination and sharing. This should be managed by</li> </ul>	Should be consistent with Article 10

<p>Lembaga Muzium Negeri Sembilan or a new NSTMH Heritage Centre.</p> <ul style="list-style-type: none"> <li>The recording and documentation of NSTMH should be seen as a priority not only to the local inventory but up to national level as well.</li> <li>The general statement about the documentation should be referred to "safeguarding" pg. 12 in National Heritage Act (2005) and item 2.1.10 (pg.12), item 2.3.19 (pg.22) and Part III (pg.23-34) in <i>Garispanduan Pemeliharaan Bangunan Warisan</i> (2012) and pg.49-52 in Principles for the Recording of Monuments, Group of Building and Sites (1996).</li> </ul>	<b>Article 22: Education, training and awareness</b>
<ul style="list-style-type: none"> <li>Education is very important and should be prioritised as one of the main missions to conserve the NSTMH. All ages should be involved in educating heritage. It involves what and how to appreciate, how to contribute to the household and to the house (<i>forms, fabric</i> and functions) to avoid further damage.</li> <li>There is a need to develop a holistic approach. Educational and vocational training programs and courses should be flexible enough to address all practical work, with an understanding of the community's needs. At the moment, there is no heritage legislation for Negeri Sembilan and no specific educational and training programs on <i>conservation</i> in general or regarding traditional houses.</li> <li>Specific skills in traditional carpentry should be considered especially by learning from the old <i>Tukang</i> (if still alive), otherwise, should persons skilled in modern techniques should be trained in traditional timber <i>conservation</i> works with the help of suitable documentation. The traditional skills from the <i>Tukang</i> need to be recorded and revived.</li> </ul>	<ul style="list-style-type: none"> <li>The need for a curriculum in traditional skills is serious and must be established under National Occupational Skills Standard (NOSS). Internship programs for practical experience in the concepts and techniques of <i>conservation</i> and the management of the built heritage must be funded by the local government.</li> </ul>
<ul style="list-style-type: none"> <li>Introduce a range of shorter CPD-type programs aimed at experienced tradesmen who wish to pursue work in heritage <i>conservation</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Work with government to ensure an appropriate industry accreditation system is established to recognise the skills of heritage tradesmen.</li> </ul>
<ul style="list-style-type: none"> <li>Promote a training program to help homeowners in maintaining the NSTMH including traditional skills.</li> </ul>	<ul style="list-style-type: none"> <li>Improve public awareness of the NSTMH through effective information campaigns.</li> </ul>
<ul style="list-style-type: none"> <li>Exchange expertise and experience amongst another type of the TMH across Malaysia.</li> </ul>	

<ul style="list-style-type: none"> <li>• Improve understanding amongst professionals (architects and conservators) through an effective education program (including CPD) in the principle of the NSTMH. It depends on who will be running the program whether at the Museum of Negeri Sembilan, professional institutions or universities.</li> <li>• The education, training and awareness program should be started from young age (primary and secondary) and prioritised it if the NSTMH Centre is established as in Article 14.</li> </ul>	
<p><b>Article 23: Engaging the house owner</b></p> <ul style="list-style-type: none"> <li>• It is important to start with engaging the <i>homeowner</i> directly by making them understand what is all about. The NSTMH is a private property, and the <i>homeowner</i> is the one who takes fully responsibility of decisions about their house future.</li> <li>• The NSTMH is not only important to the <i>homeowner</i> but also to the whole <i>kampung</i> and Negeri Sembilan. As part of the TMH heritage, it may attract even other people outside the region or country.</li> <li>• Lack of good case studies is a fundamental problem, so the <i>homeowner</i> should be exposed to a good example by introducing them to the best <i>conservation</i> approach in the <i>kampung</i>. It will make them more understand what <i>conservation</i> is all about.</li> <li>• This experience will give them indirect exposure on the real situation of <i>conservation</i> works on traditional Malay architecture particularly NSTMH.</li> <li>• If the selected NSTMH has been conserved or repaired as 'one off' budget, the maintenance part should be carried on by the <i>homeowners</i> themselves and are encourage to do their own repair while lives in the house.</li> </ul>	Should be consistent with Article 24
<p><b>Article 24: Kampung Homestay Program</b></p> <ul style="list-style-type: none"> <li>• The uniqueness of the NSTMH could be promoted by setting up and coordinating an "Organised <i>Kampung</i> Homestay" scheme. Setting up networks of homestay could offer a different experience from what the modern hotel can offer. While living in the house, the <i>homeowner</i> will receive and entertain the guest. It will be maintained by the hotel operator who at the same time protects the architecture of the house and its <i>setting</i> context of the <i>kampung</i>.</li> <li>• Giving them some incentives might be a good start to making them believe why their house should be kept intact and in good condition. Using their house as a tourist attraction (organised <i>kampung</i> homestay program) can generate income as well for them (through donation of access fee to the property).</li> </ul>	Should be consistent with Article 23

Words in italics words are defined in Article 1.

Figure 7.3: The INITIAL NSTMH-CPF.

## **Appendix E : Publication**

1. Sulaiman, M. S., & Theodossopoulos, D. (2014). Challenges in the Conservation of the Traditional Malay House in the case of Rumah Tukang Kahar and Rumah Dato' Laksemana Hajah Bogdad. In *REHAB 2014: Proceedings of the International Conference on Preservation, Maintenance and Rehabilitation of Historical Buildings and Structures..* (pp. 399-412). Barcelos, Portugal